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AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL — COMMERCIAL — INDUSTRIAL

June 5, 1961

Vol. 93, No. 6, Serial No. 1,680

Reentered as second class matter October 3, 1936, at the post office at Detroit, Mich., under the Act of March 3, 1879.

Subscription Price, $6 Per Year (U. S. and Canada). Foreign: $10.00 Per Year.

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Contractors Find Service Costs Them $8.71 Per Hour

LOS ANGELES—How much does an hour of service work cost?

Ten refrigeration and air conditioning contractors here made an intensive study of their own cost figures for March and April and came up with a composite figure of $8.71.

They compared their cost figures for this year with the same costs in 1960 and found they had increased by 29 cents per hour.

Twenty-eight cents of this represented a wage increase for servicemen and the other cent represented increased cost of lost time. All other costs remained the same. None lowered.

The 10 contractors are members of the service committee of the Refrigeration & Air Condi-

(Continued on Page 39, Col. 1)

In the News This Week

Indict OTM for Hiding Goods' Foreign Origin

CHICAGO—A grand jury indictment was returned on May 16 in the Houston Div. of the Southern District of Texas U. S. District Court, alleging the removal of markings of the country of origin on imported steel articles by John C. Bradshaw and OTM Corp., according to a report issued by the American Forged Fitting & Flange Association here.

The grand jury charges that from on or about June, 1960, through Jan. 19, 1961, in the Houston Div. of the Southern District of Texas, and within the jurisdiction of the court, Bradshaw, president of OTM Corp. and OTM Corp., a Texas corporation operating in Houston, "did, at Houston, Texas, with intent to conceal the information given thereby, knowingly and wilfully remove, destroy, and obliterate and caused to be removed, destroyed, and obliterated from certain steel articles of a foreign origin imported into the United States, marks indicating the English name of the country or origin of said article, which marks were then and there required under Section 1304, Title 19, United States Code, and regulations thereunder. Violation Section 1304 (e), Title 19, United States Code."

•

Trane Plans To Broaden European Operations

LA CROSSE, Wis.—Outlining plans for expanding The Trane Co.'s foreign operations, D. C. Minard, president, said the nucleus of a Trane sales organization to serve the Common Market of Europe is being formed.

Minard stated that before the end of the year, there may be definite plans for a new manufacturing plant to be established in Milan, Italy. Also under consideration, he added, is a second plant in England.

Minard addressed 35 members of Investment Analyst Society groups from Chicago, Milwaukee, Minneapolis, and St. Paul during a visit to Trane's facilities.

•

Charge Dairy Farmer Co-op with Unfair Acts

WASHINGTON, D. C.—United Farmers of New England, Inc., Morrisville, Vt., a cooperative marketing association with a membership of some 2,200 dairy farmers, has been charged by the Federal Trade Commission with granting discriminatory prices and allowances, including display cabinets, to favored purchasers of its milk and other dairy products.

The FTC's complaint alleges, in part, that the cooperative has paid advertising, promotional, and other allowances to some customers without making them available on proportionately equal terms to other competing customers as required by Section 2(d) of the law. For example, the complain states, certain selected Massachusetts customers, principally large grocery chains, were granted preferential cash payments for promotional advertising, display cabinets, and new store openings.

6 Panel Sessions on NAPC Program

DETROIT — Six panel sessions, including one on heating and cooling, are among events programmed for the 79th annual convention of the National Association of Plumbing Contractors.

The convention will be held here June 19-22. Staged in conjunction with the meeting will be the National Plumbing-Heating-Cooling Exposition, dates for which are June 18-21.

Some 8,000 to 9,000 plumbing principals — contractors, manufacturers' representatives, public health officials, and sanitarians —are expected to be on hand for the combined affair in Cobo Hall, according to the NAPC.

The panel sessions are set for Monday and Tuesday, June 19 and 20. There will be three panels each day, scheduled to run concurrently and starting at 3 p.m.

Panels June 19 will be on control of labor productivity, apprenticeship training, and plumbing standards. On June 20 the topics will include heating and cooling, problems in plans and specifications, and insurance coverage.

The exposition will be opened officially at 1:30 p.m. on Sunday, June 18, when Mrs. Carl N. Fin-

(Continued on Page 39, Col. 3)

New Norge Plant In Ark. To Make York Room Units

YORK, Pa. — Production of York room air conditioners will be transferred to the new Norge Div., Borg-Warner plant at Ft. Smith, Ark. and York Div. facilities at Decatur, Ill., where the room units have been produced, will be rearranged and improved for increased production of automotive air conditioning compressors, and for other products, it has been announced by Joseph B. Elliott, president of the York Div.

A prime reason for moving room air conditioner production to Ft. Smith, Elliott stated, is to take advantage of the latest processing and tooling equipment at the Arkansas plant, "which will enable York to make further advances in the quality

(Continued on Page 4, Col. 5)

Plan Program for 'AC & R Week' Feb. 11-15 In L. A.

LOS ANGELES—At a meeting here of the ARI Exposition Committee and representatives of various groups who will participate in the activity, preliminary plans were outlined for both the educational and social programs of the "Air Conditioning and Refrigeration Week," which will be staged here Feb. 11-15, 1962, in conjunction with the 12th Exposition of the Air Conditioning, Heating & Refrigeration Industry.

The Exposition, heralded as

(Continued on Back Page, Col. 1)

MCA Survey Pinpoints Rising Costs

Companies Assuming More Fringe Expenses

By Frank J. Versagi

MIAMI BEACH, Fla.—● Sales are increasing, but net income is dropping.

● There is a move away from share-the-cost pension and profit-sharing programs and a trend toward companies paying all the costs of such programs.

● The use of straight-line depreciation is gaining supremacy over the declining balance method.

● Salaries paid to stockholding officers have dropped, while salaries going to non-stockholding key employes have risen.

These are some of the conclusions induced from data supplied to the Mechanical Contractors Association of America, Inc. by 223 of its members who responded to questionnaires used to prepare MCA's 1960 Annual Statistical Survey Report. Results are tabulated under four classifications: Class 1—up to $250,000 gross sales; Class 2—$250,000 to $1,000,000; Class 3—$1-to-2.5 million; Class 4—over $2.5 million. The report was presented here during MCA's 72nd annual convention.

Anthony L. Cherne, chairman of MCA's statistical survey committee, commented that the trends toward company payment of all costs for profit-sharing and pension programs and toward higher salaries for non-stockholding key employes "re-

(Continued on Page 41, Col. 3)

Outside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Bring Your Umbrella

You hear a lot about the romance and picturesqueness of Japan (and it's all true, too) but nobody remembers to warn you about the rain. They get more than 100 inches of it a year here—all through the winter, spring, and summer.

Earthquakes and monsoons vary the showery monotony. What a market for dehumidifiers!

What a market, period. Japan in 1961 is the U.S.A.'s second biggest customer, outranked only by Canada. That's something else we don't hear in The States. About all we hear at home is complaints against Japanese competition in textiles, transistor radios, and cameras.

Actually, Nippon buys much more from the U.S.A. than she sells to us. It's an amazing thing, when you stop to think about it, that the enemies we defeated in World War II (Japan and Germany) now are the second and fourth greatest importers of our goods.

Geographically, Japan is a flock of islands. Four big ones and thousands of dots in the sea. Like another island empire, Great Britain, it must export or die. Again like Britain, it can't feed itself, nor does it

(Continued on Page 18, Col. 1)

Carrier Reports Earnings of $1.24 Per Share During Second Quarter

SYRACUSE, N. Y. — Carrier Corp. reported earnings of $1.24 per share of common stock for the three months ended April 30.

The comparable 1960 figure was a loss of 86 cents and this was due largely to two strikes which resulted in major disruptions, the company said.

The second-quarter figures for fiscal 1961 were: orders booked, $67,988,000; net sales, $73,195,000; net profit, $2,741,000. During the three months ended April 30, 1960 orders booked totaled $71,080,000 and net sales $51,026,000. The loss incurred was $1,530,000.

In the first half of fiscal 1961, the corporation earned $1.41 per common share as opposed to a loss of 72 cents in the same period a year earlier.

Key figures for the six months ended April 30, 1961 were: orders booked, $134,904,000; net sales, $128,790,000; net profit, $3,303,000. The comparable 1960 data were: orders booked, $129,481,000; net sales, $105,570,000; and a loss of $1,031,000.

Regarding firscal 1961 as a whole, Cloud Wampler, chairman of the board, stated: "It now appears that the earnings of Carrier Corp. will be substantially in excess of last year's total."

3 New ARI Standards Update Existing Ones

WASHINGTON, D. C.—Three new ARI Standards, consolidating and updating a number of existing standards covering refrigerant liquid receivers, water-cooled refrigerant condensers, and refrigerant-cooled liquid coolers, have been published by the Air-Conditioning & Refrigeration Institute.

The new standards are:

ARI-450-61, "Water-Cooled Refrigerant Condensers," which supersedes tentative ARI Standards 4-52 and 4-54 (1953), "Construction of Ammonia Condensers"; tentative ARI Standard 4-62, (1953) "'Freon' Water-Cooled Condensers," and pertinent parts of ARI Standards 4-53 and 4-55 (1953), "Performance of Ammonia Condensers," and tentative ARI Standard 4-81 (1953), "Application of Heat Transfer Equipment."

ARI 480-61, "Refrigerant-Cooled Liquid Coolers, Remote Type," which supersedes tentative ARI Standards 4-71, 4-72, and 4-76 (1953), "Water and Brine Coolers," and pertinent parts of ARI Standard 4-81 (1953) "Application of Refrigerant Heat Transfer Equipment."

ARI Standard 495-61, "Refrigerant Liquid Receivers," which supersedes ARI Standard 4-56 (1953), "Ammonia Liquid Receivers," and ARI Standard 4-63 (1953) "'Freon' Liquid Receivers."

These new standards were developed by the ARI Engineering Dept. under supervision of the Engineering Committee of Sub-Section "B" of the ARI Heat Transfer Section, whose chairman is L. R. Smith of Acme Industries, Inc.

All three of the new standards are available from ARI, 1346 Connecticut Ave., N.W., Washington 6, D. C.

Post Heads National Sales Organization For Robertshaw

RICHMOND, Va. — Frank H. Post, vice president and general manager since January, 1956, of Robertshaw-Fulton's Robertshaw Thermostat Div. in western Pennsylvania, has been appointed vice president, marketing, of the company.

Thomas T. Arden, president of Robertshaw-Fulton, said Post will organize a new national sales organization with headquarters in Richmond to market several new lines of Robertshaw products. It is expected that this nationwide organization will include a number of additional branch sales offices throughout the country.

Post also will participate in the administration of Robertshaw's overseas activities, which now embrace manufacturing plants in eight countries.

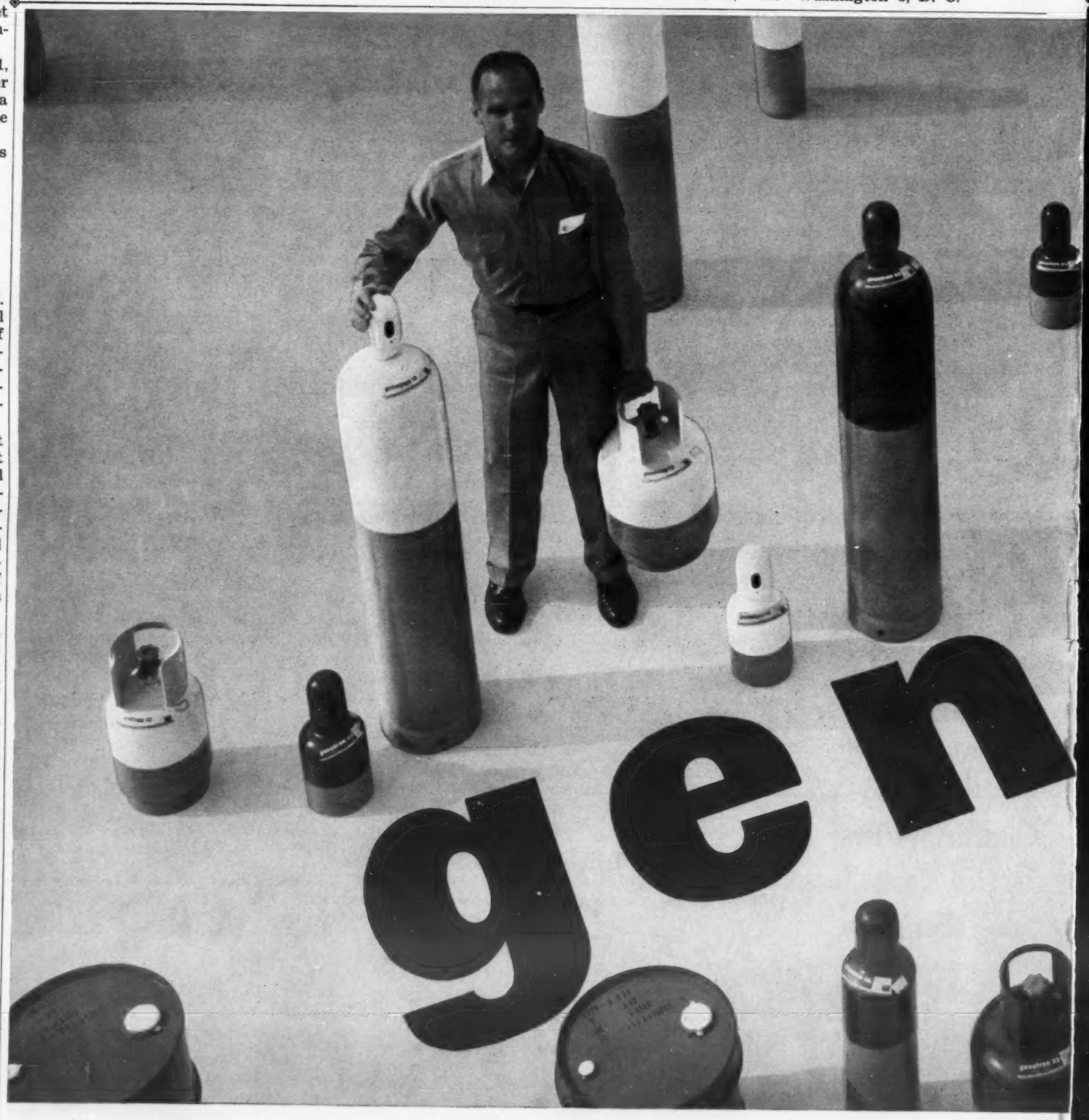
Arnold C. Hansen, who has been assistant to the general manager of Robertshaw-Fulton's Grayson Controls Div. at Long Beach, Calif., will take over Post's responsibilities as general manager at the Robertshaw Thermostat Div. Hansen was elected by Robertshaw's board of directors as an assistant vice president of the corporation.

MELCOR Appoints Dr. Bernoff To Direct Research

TRENTON, N. J.—Dr. Robert A. Bernoff has been appointed director of research for Materials Electronic Products Corp. (MELCOR) here.

Dr. Bernoff will be responsible for research on thermoelectricity with emphasis on material approaches and theoretical concepts. He holds a Ph.D. from Temple university and is a member of the staff at that university. He has been with David Sarnoff's RCA Research Center.

The 27-year-old scientist is one of the youngest members of his profession to hold the responsible position of director of research, it was noted.



The refrigerants you want...packaged

genetron 11 CCl_3F ORANGE LABEL TRICHLOROMONOFLUOROMETHANE
genetron 12 CCl_2F_2 WHITE LABEL DICHLORODIFLUOROMETHANE
genetron 22 $CHClF_2$ GREEN LABEL MONOCHLORODIFLUOROMETHANE
genetron 113 $C_2Cl_3F_3$ PURPLE LABEL TRICHLOROTRIFLUOROETHANE
genetron 114 $C_2Cl_2F_4$ BLUE LABEL DICHLOROTETRAFLUOROETHANE

Baechle Is Acting Manager of EASA

ST. LOUIS — August A. Baechle has been named acting executive vice president of the Electrical Apparatus Service Association, Inc., pending appointment of a permanent EASA manager by the association's board of directors, it has been announced.

Baechle, who joined the EASA St. Louis headquarter's engineering staff last Sept. 1, temporarily succeeds Joseph M. Harrington, who resigned May 2. The resignation of Kenneth B. Mitchell, Jr., office manager, has also been accepted.

At Missile Sites

JFK Given 'No Strike, No Lockout' Pledges

WASHINGTON, D. C.— Unions and key companies involved in the program have promised full cooperation with the new "missile sites labor commission" set up by President Kennedy in an executive order.

They gave the President a "no-strike, no-lockout" pledge following announcement of creation of the board, which is intended to prevent work stoppages in the missile and space programs. Among those giving pledges were the Associated General Contractors and Mechanical Contractors Association.

Secretary of Labor Goldberg was appointed chairman of the commission. William E. Simkin, director of the Federal Mediation & Conciliation Service' is vice chairman. The board also includes nine other members.

The machinery for settling disputes is based on a policy of "voluntarism," it was stressed by the President, and Secretary Goldberg. However, the President's action puts the government strongly into the picture if disputes aren't settled promptly.

For example, it was pointed out, if two building trades unions get involved in a local dispute, the government first would rely on machinery these unions have established.

In a jurisdictional dispute between a building trades union and an industrial union, the argument would be heard by a panel of public members. The government board would take over only if these factors failed. All would be asked to honor their pledges while moves to settle disputes were being made.

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Airtemp Hits $2,010,409 In Telethon

DAYTON — Chrysler Corp.'s Airtemp Div. sponsored a national telethon Thursdey, May 11, which accounted for sales of $2,010,409 in air conditioning and heating equipment from distributors to dealers, Airtemp announced.

The program, entitled the "Parade of Profits," was designed to move Chrysler products to the point of purchase on the eve of the air conditioning industry's peak selling period.

"Our original objective was to move $500,000 worth of residential and commercial equipment from our distributors to Chrysler Airtemp dealers," reported Thomas W. Kirby, vice president-marketing.

Kirby said the May 11 totals resulted in orders from the Dayton factory by distributors of $2,533,677, more than a million dollars over anticipated total.

This was Chrysler Airtemp's second major telethon promotion in three weeks. On April 25, a "Sell for Silver" program resulted in the sale of 18,950 room air conditioners from Chrysler distributors to dealers.

"I think that these two promotions indicate that the general economic picture is going to be good for the air conditioning industry this year."

The May 11 incentives for wholesale salesmen included clothing gifts for every two tons of equipment sold that day for shipment before May 31.

Each distributor principal who finished first in his respective region won a week's October vacation with his wife in Miami, Fla., all expenses paid.

Atomic Shelters To Be University Seminar Topic

UNIVERSITY PARK, Pa.— Three seminars dealing with atomic shelter and survival in the nuclear age will be offered this summer by The Pennsylvania State university.

The first of these, on "Planning Aspects of Atomic Shelter," will be held July 9-21. It is for architects and engineers who are or will become involved in planning and preliminary design aspects of buildings, shelters, and facilities to resist the effects of nuclear weapons.

The second seminar, from July 23 to Aug. 4, will be on "Structural Engineering Aspects of Atomic Shelter." This is a short course for structural and architectural engineers involved in the analysis and design of structural systems and radiation shielding systems of buildings, shelters, and structures.

The third seminar, to be held Aug. 13-18, is titled "Survival in the Nuclear Age—Executive Management."

Further information on the seminars may be obtained from the Shelter Research & Study Program, 133 Hammond Bldg., The Pennsylvania State University, University Park, Pa.

Bendix-Westinghouse Cites Benefits of New Procedure on Returned Materials

EVANSVILLE, Ind.—Said to provide many advantages to its authorized wholesalers, a new returned material procedure has been put into effect by the Evansville Div., Bendix-Westinghouse Automotive Air Brake Co., according to Donald J. Wood, general sales manager.

Under the plan, which is now in effect, all inoperative motor compressors and parts returned by its authorized wholesalers to Bendix-Westinghouse will be accepted for straight credit, it was explained by John W. Downen, manager of service and wholesaler accounts. They will not be replaced to the wholesaler's inventory.

Advantages to the authorized wholesaler were listed as follows:

"1. The flow of paper work between wholesaler and Bendix-Westinghouse will be much more rapid.

"2. The wholesaler will be able to finalize transactions with his customer more quickly. Factory decisions as to warranty will be quickly available.

"3. The wholesaler will be able to control inventory and increase or decrease inventory, according to seasonal requirements.

"4. Wholesalers can take advantage of the lowest freight rates by ordering replacement motor compressors and parts in quantity. The new system also eliminates small shipments formerly made each time a return of a few parts or motor compressors was made."

Wood indicated that the plan was instituted as a result of a complete study of the returned material procedures used by most manufacturers.

Refrigeration In Six Tongues

PARIS, France—An International Dictionary of Refrigeration in six languages will be issued soon by the International Institute of Refrigeration.

The 300-page dictionary will contain 1,600 expressions in English, German, French, Russian, Spanish, and Italian.

It may be ordered from the International Institute of Refrigeration, 177 Boulevard Malesherbes, Paris 17e, France. Associate members of the Institute can purchase the volume for $4.50.

Westinghouse Appoints Hill

STAUNTON, W. Va. — S. R. Hill has been appointed central region sales manager for the air conditioning division of Westinghouse Electric Corp.

S. R. Hill

The division's central region includes Ohio, Michigan, Pennsylvania, and Maryland. Hill will be located in the division's central region offices in Pittsburgh.

Hill was employed by the Trane Co. from 1948 through 1957. During 1958 and 1959, he was a partner in a consulting engineering firm in Oklahoma City, specializing in the design of heating, air conditioning, plumbing, and electrical systems.

York Move--

(Continued from Page 1, Col. 4)

room air conditioner field." The Ft. Smith location also provides a more central location of production facilities for the large consumer markets in the south and southwest.

York's production of automotive air conditioning compressors has more than matched the growth of this market, and there has been a steady need for expansion of production facilities of this product, it was indicated. What the other products are that might be produced in the Decatur plant was not indicated in the announcement on the move.

On questions as to what effect, if any, this move might have on distribution policies on room air conditioners, the company stated that it had "nothing more to add to the formal announcement." Text of the formal announcement follows:

"York room air conditioner production will be transferred from Decatur, Ill. to the new Norge Div., Borg-Warner plant at Ft. Smith, Ark., Joseph B. Elliott, president, York Div., Borg-Warner Corp. has announced.

"At the same time, Elliott said that more efficient plant equipment and improved plant layout is planned for the Decatur works to take advantage of York's increased leadership in the automotive air conditioning compressor field.

"In anticipation of increased requirements for automotive air conditioning compressors now made in York's Decatur plant plus added space requirements for new production, the Decatur facilities are being rearranged and it is anticipated that a portion of the Decatur plant may in the very near future be required in projected expansion plans for other products.

"The new Norge facility at Ft. Smith is being equipped with the latest processing and tooling equipment and will enable York to make further advances in the quality room air conditioner field.

"In addition, room air conditioner production will be more centrally located for large consumer markets for air conditioning in the South and Southwest.

"Elliott stated that these plans indicate York's confidence in the growth of our economy and the part which York expects to play in this expansion.

"York recently announced the appointment of Marion L. Dannells, Jr. as plant manager of York's Decatur operation. Dannells is an executive of many years' experience in manufacture and development of compressors. He has been associated in executive positions with Tecumseh Products Co., Copeland Refrigeration Corp., and Philco Corp."

Frank Hood Trane Named to Trane Board

LA CROSSE, Wis. — Frank Hood Trane, 29, was elected to the board of directors of The Trane Co. at the annual meeting of stockholders.

It was also announced that Charles Hansen, 34, has been elected secretary and general counsel of Trane.

Today's Topic: Refrigerator Shelves

How do yours rate with the Board of Public Opinion?

Rusty refrigerator shelves get a thumbs-down verdict; so do shelves and trays that warp and crack. But this is the risk when you replace quality *aluminum shelves* with those made of other materials. The few pennies you save per refrigerator can be the costliest savings ever when you evaluate the possible long term damage to your reputation . . . and sales!

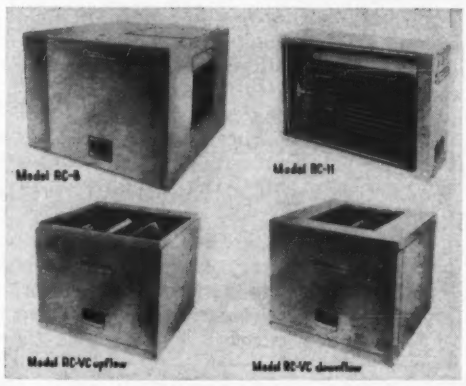
Aluminum shelves and trays are a basic requirement in *every price range*. Only aluminum is rustfree and carefree, lightweight and strong, nontoxic and corrosion resistant. So why take a chance? Why gamble with your reputation for quality when you can be so sure with aluminum.

Aluminum shelves can be easily fabricated in many cost-reducing forms—from wire, formed sheet, expanded extrusions, etc.—in a variety of alloys and colors. Reynolds Aluminum Specialists will help in your design and production—or will fabricate shelves for you to your specifications. *Reynolds Metals Company, P. O. Box 2346-AS, Richmond, Virginia.*

REYNOLDS ALUMINUM

Watch Reynolds TV show "Harrigan & Son", Fridays—ABC-TV

American-Standard Introduces Line of 2 to 7-Ton Evaporator Units for Air-Cooled Air Conditioning Systems



FOUR new evaporators recently introduced by the Air Conditioning Div. of American - Standard are shown at the right.

NEW YORK CITY—A new line of 2-ton to 7-ton evaporator units for air-cooled air conditioning systems has been introduced by American-Standard Air Conditioning Div.

According to J. P. Farrell, products manager for the division, the new evaporators are ARI listed for installation with American-Standard air-cooled condensing units, and incorporate many new and improved features.

Farrell said the improved products cost no more than previous models, and permit a much broader range of installation.

"These evaporators also feature a new concept in cabinet design which speeds and simplifies installation, and permits use of the same evaporator for both up-flow and down-flow installation," he stated.

The new evaporator line consists of vertical air flow evaporators in 2, 3, 4, and 5 tons; horizontal air flow evaporators in 2, 3, 4, and 5 tons; blower equipped evaporators in 2, 3, 4, 5, and 7 tons; and counterflow evaporators in 2, 3, and 4 tons.

According to Farrell, the most unusual feature of the new product design is the fact that all of the fan-less evaporators are shipped unassembled. "This," he said, "permits quicker installation and considerably lower inventory requirements."

The announcement continued: "The upflow evaporator is shipped with separate galvanized, Bonderized, painted, and fully insulated bottom pan.

"Because this bottom pan is not assembled it is easy to enlarge the opening, if necessary to fit the outlet of any furnace. Full insulation, prevents condensation which might cause possible damage to the furnace.

"Side panels are equipped with knock-out openings in each panel. This gives the installer added flexibility and savings since he is not limited to one location for routing the tubing.

"Front and rear panels are interchangeable. Because the panels are the same size it is possible to install the coil from either the front or the rear."

In addition, the new evaporator itself offers several major advantages, it was pointed out.

The fins feature rippled edges for mechanical strength, and are rippled through their depth providing efficient heat transfer, it was indicated.

"Coils feature four independent refrigerant circuits without cross tubing," the announcement said. "All units are equipped with tinkerproof adjustable superheat expansion valves. Superheat is factory set yet there is internal adjusting means to alter the superheat setting when necessary.

"The expansion valve features slow response rate to keep hunting to a minimum on start up. The valve is thoroughly aged and designed to withstand bonnet temperatures without warping or causing malfunction. The bulb is not fastened to the suction line so that the installer does not have to remove, then reinstall the bulb after soldering. The valve is installed at the factory to minimize installation time.

"The manifold permits easy direct connection of tubing from either side of the jacket, or exit may also be made in upward direction."

Reduced shipping units and inventory are cited as a major advantage of the new line by American-Standard. Whereas it previously offered 11 combinations of evaporator and condensing units representing 22 units, the new line provides 15 combinations of evaporator and condensing units with only 19 shipping units.

"The inventory reduction puts both the distributor and the dealer in a position to offer a wider variety of product at reduced inventory and handling costs," it was stated. "Shipping costs also reflect appreciable savings."

Tempcon, Inc. Opens Rochester Warehouse

MINNEAPOLIS — Tempcon, Inc. here, has announced the opening of a new branch warehouse in Rochester, Minn., to serve southern Minnesota.

A complete inventory of refrigeration, air conditioning, and heating supplies will be stocked. An open house was held May 11-12.

All purchasing for the Rochester branch will be done through the Minneapolis office. Harold Lein will manage the Rochester warehouse.

There is no change in the corporation management—J. W. Wheeler being president and treasurer, Gene Coulter—vice president, and Wally H. Anderson—secretary.

Tempcon, Inc. of Minneapolis opened its first operation on Sept. 17, 1946.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

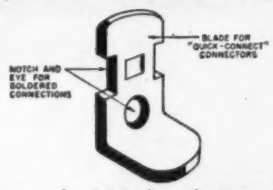
Place your ad today!

A FEW FACTS ABOUT MOTOR CAPACITOR TERMINALS

Contrary to a common belief shared by many users of specialty capacitors for a-c applications, all capacitors are *not* alike. Some brands have not changed in design or construction for years. Others make changes to keep up with competitive products. Sprague Electric, however, constantly improves its designs for maximum dependability and minimum cost.

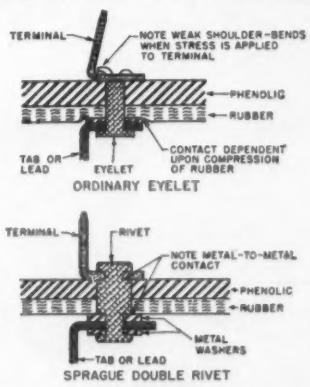
Although the terminal assembly is a relatively small part of the entire unit, it has often been the cause of capacitor failure. Here, Sprague has developed new, improved terminals which eliminate failures of this nature, reduce equipment manufacturers' assembly time, and make future servicing easier. Here are some of those recent improvements:

1. "UNIVERSAL" TERMINAL LUG



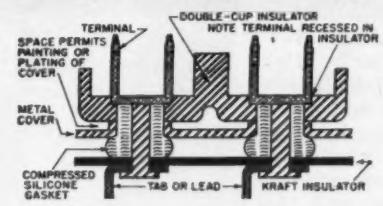
Single-blade or dual-blade, designed for use with "quick-connect" connectors. Also has notches and eyes for soldered connections—an important feature when "quick-connect" connectors are inadvertently destroyed by servicemen. Copied and imitated by others, universal terminal was originally designed by Sprague, is now patented by Sprague.

2. DOUBLE RIVET CONNECTION



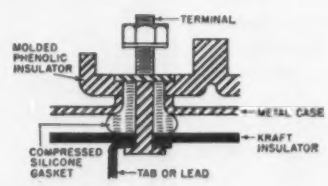
Unique new rivet design for positive metal-to-metal contact between rivet and terminal as well as between rivet and tab. Unlike ordinary eyelet where weak riveted shoulder will bend or break when terminal is pulled, as often happens when removing snug-fitting "quick-connect" connectors, Sprague rivet prevents arcing caused by loosened contact points. Patent pending on this unique design.

3. DOUBLE-CUP INSULATOR



New one-piece molded phenolic cups for increased rigidity and prevention of terminal rotation. Unlike ordinary single-cup construction, which permits accidental twisting of terminals, causing leads inside capacitor to "short" or break off, terminals in Sprague's new double-cup insulator cannot turn because of square recess in molding which accommodates base of terminal. Bottom of insulator has contoured shape which permits plating or painting of entire capacitor cover, in full compliance with Underwriters' Laboratories, Inc. requirements for outdoor applications. No hidden, unprotected areas, as with ordinary single-cup. Patent pending on this assembly.

4. STURDY STUD TERMINAL



Pull-proof, welded terminal assembly designed to take severe physical abuse. The first reliable stud terminal available on a-c specialty capacitors. Although superior in performance, new Sprague design actually costs less than any other stud-type terminal. Patent pending on this assembly.

For Engineering Bulletins or application assistance on Sprague's complete line of a-c specialty capacitors, write to Technical Literature Section, Sprague Electric Company, 63 Marshall Street, North Adams, Massachusetts.

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Cooling Contractors Air Their Problems

By Frank J. Versagi

NEWS editors are frequently called upon to speak at industry gatherings at the national, regional, and local levels. Our editors talk to engineers, wholesalers, contractors, manufacturers, distributors, dealers.

Occasionally, the audience is just the right size, the mood is just right, for an editor to turn the usual question-and-answer period into a dialogue with the group he has just addressed. In this kind of casual conversation, individuals tend to be more at ease in expressing themselves about the things that are uppermost in their minds.

Such was the atmosphere which led to the following story. It happened at a RACCA meeting in the Midwest.

Unlicensed Competitors Is Top Problem

What would you say is the most important problem facing you as a contractor today, the NEWS asked to start the discussion.

"Competition from unlicensed contractors," was the immediate reply. "Several suburbs and outlying areas of the state do not have a reciprocal code agreement with our city. Almost always, the unlicensed operator is also a non-union operator, and his lower wage levels give him an edge when we bid on a job."

As an example of this sort of thing, another contractor cited his recent loss of a 40-ton installation, "a $12,000 job," to an unlicensed contractor.

"I think there is more to it than just wage levels," added another member. "I think it is fair to generalize that the know-how of the unlicensed man is less than it should be—else, why would he not obtain a license. When we bid a job, we know what components and labor must go into the installation. We sum our figures, add a reasonable markup, and submit the bid. The unknowledgeable fellow forgets components, neglects some labor charges, and this allows him to bid low."

Several of the contractors charged that the local union "is not being quite fair in the way it imposes its demands. They do not insist that the same wages be paid by all contractors, and this makes for more inequity."

Politics In Licensing?

Having already talked to some of the unlicensed contractors about whom the RACCA group was complaining, the NEWS stated that there was objection that the licensing arrangements were "politically motivated, rather than dedicated to the public welfare." Further, there is fear that becoming licensed and joining the RACCA group leads necessarily to unionization.

"Two members from our organization sit on the 5-man licensing board," the local group's president explained. "Two of the board are city officials, and one board member represents the public; he usually is a refrigeration engineer or similar representative of users of cooling equipment. The licensing board deliberates long before it revokes a license. Recently, for example, we revoked the license of a company which was not itself using the license, but was bootlegging permits for other unlicensed people.

"We have warned our members that if any of them is caught in such activity, his license will also be revoked."

"Sure," joined in another contractor, "some politics are involved in anything. Once in a while a man gets a license because he is brother-in-law to the mayor, I suppose. But the important thing to remember is that refrigeration and air conditioning technology is such that poor or improper installations can lead to danger to the public. What is wrong with seeking protection for the public by insisting on minimum qualifications for a man wishing to engage in such work?"

"We are neither pro- nor anti-union," offered the group's legal counsel, "so there is no pressure on our part to force union affiliation. In practice, however, we find that good licensed contractors, union or not, pay the same wages, offer the same fringe benefits."

Let's switch to another major problem facing you, suggested the NEWS. Next to the licensing problem, what bothers you most?

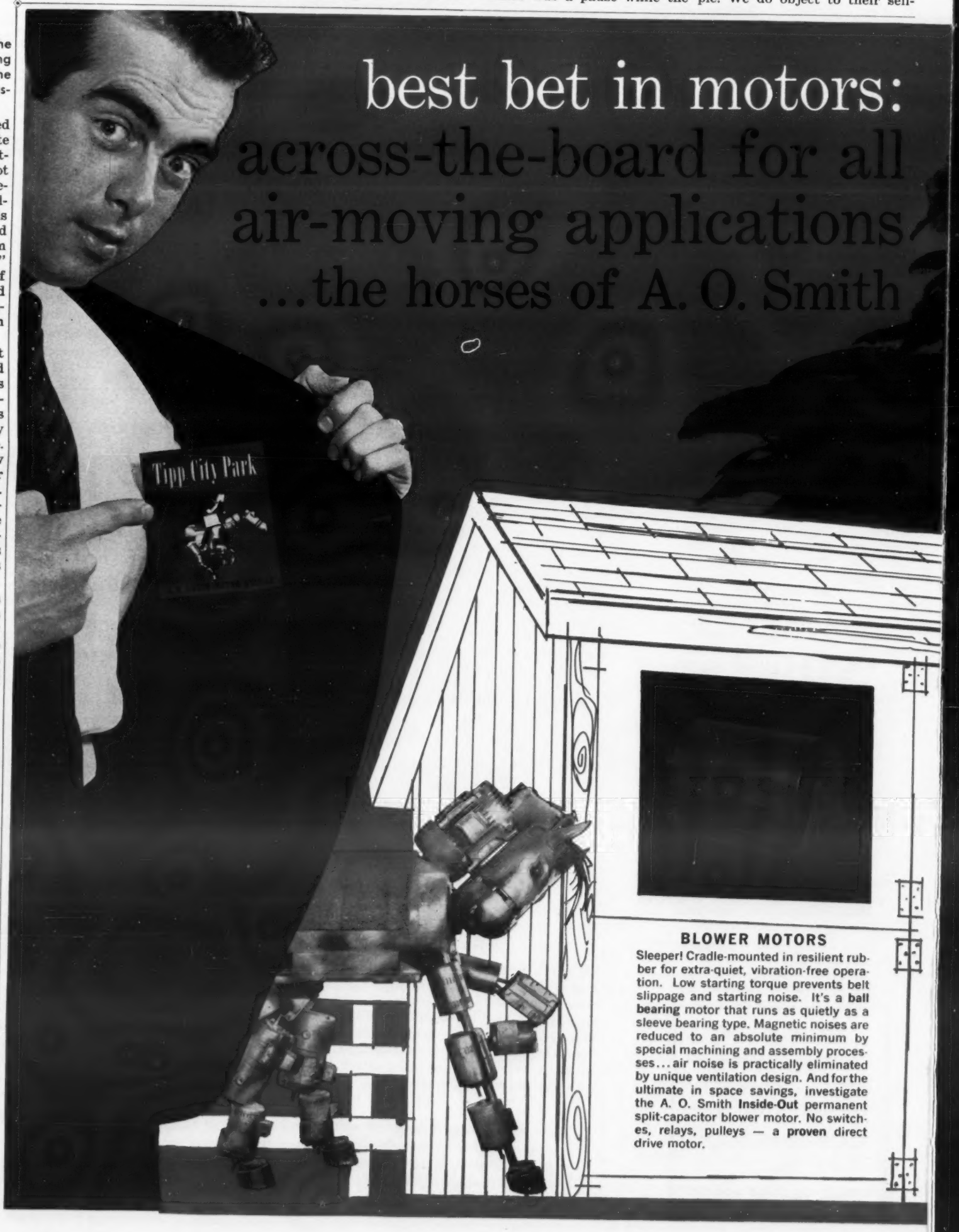
There was a pause while the minds rolled that one around.

"Direct selling" . . . "Jurisdictional disputes" . . . "Wholesalers" came out simultaneously.

Direct Selling Problem

What is the problem with direct selling? the NEWS asked.

"We do not and cannot object to an equipment manufacturer's selling to a large industrial or commercial account which has its own maintenance people or, sometimes, installation people. We do object to their sell-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ing to smaller manufacturers who do not so qualify and who must then come to us or our competitors for installation or at least for installation supervision."

Industrial Accounts

But only a few minutes ago you were discussing some of the jobs you have been doing for industrial accounts. The fact seems to be that you both sell equipment to, and sell installation only to, industrial jobs. How does this come about?

"It works two ways. If the industrial account has the ability to buy direct, they may not always do so. When they buy direct from the equipment manufacturer, we contractors get the chance to bid on the installation sometimes. If the equipment is stuff they are familiar with and can handle with their own people, we don't even get the installation offer. Once in a while, for reasons known chiefly to them, these same accounts will let us bid on equipment *and* installations."

"There's another angle which enters the picture," said another voice. "The jurisdictional disputes among unions is affecting our ability to get the work. I had one man who was all but a permanent employe of a major industrial account for 10 years.

Competition from the Unlicensed, Direct Selling Top of Troubles List

This account, under the pressures of the jurisdictional dispute among the unions, had begun using its men for more and more of the work which used to go to us."

"—and to mechanical contractors, as your recent story pointed out," offered a voice from the back of the room.

"Anyway," continued the interrupted contractor, "I was recently informed that this industrial account could no longer use my man for cooling installations and maintenance."

Mechanical Contractors? No!

Do you consider yourselves mechanical contractors?

"No! No! No!"

"In fact, we would like a fourth specification for construction. In addition to the traditional architectural, mechanical, and electrical specs, there should be a specification for air conditioning and refrigeration."

"Especially since, in many installations, the dollar volume of the cooling application exceeds the volume of any other segment."

"And the specs, whether they are separate or not, should be written by the consulting engineer or the prime contractor in such a way as to insist that the refrigeration and air conditioning equipment must be purchased, supplied, and installed by the refrigeration and air conditioning contractor."

"As in the case of large industrial accounts, we sometimes bid on equipment, sometimes only on installation supervision."

"Didn't I hear that in Chicago the sheet metal people are insisting on a separate specification for their work. This stuff can get all out of hand."

"Let's get back to jurisdiction. It's not only a problem with industrial accounts, but the relationship with the plumbers, the electricians is a doozy. A plumber may not know anything at all about the refrigeration plumbing, but—even if we do the work—he must okay the installation."

"I think it works the other way; he has to do the work under our supervision; we can't use our own knowledgeable men to do the job. Same problem with electricians."

"The codes are erratic; depending on locality, on size of the installation, on local politics, all these things vary."

Problems with Wholesalers

How about wholesalers? What are your problems with them?

"Things are getting better. Fundamentally, we want their cooperation in refusing to sell refrigeration and air conditioning supplies to unlicensed people. Especially refrigerant."

"Why just refrigerant? Why not everything which goes into a system?"

"I just got a call from a customer friend of mine who tried to buy an expansion valve from ——; the wholesaler turned him down. That's progress."

"The code is being better enforced now. It should be relatively simple for a wholesaler to determine whether a man is qualified to buy refrigerant and refrigeration supplies. We want to go further; we want a code requirement that the *wholesaler* must be licensed by the city to sell refrigerant."

What About Unlicensed?

In view of your earlier admission that part of your problem is the lack of reciprocity with outlying areas, what can the wholesaler do if one of these men who doesn't need a license to operate in his own locality comes in for supplies?

"We'd like to have the wholesaler refuse to sell him."

"I'm afraid that would be restraint of trade."

"We'll have to find an answer to that one."

"Only a very few wholesalers any longer sell to our customers; this used to be a big problem. In fact, a few years ago, there was an attempt to set up a co-op among contractors to by-pass the wholesaler. It didn't work."

(Continued on next page)

PLAN ACROSS-THE-BOARD — You make your picks from a *complete* line of air conditioning and heating equipment motors—*blower* types . . . *inside-out* design . . . *hermetics* . . . *integrals* in a wide range of hp plus an exceptional range of modifications.

POWER WITH A PEDIGREE — The right combination of features are bred into each A. O. Smith motor type to deliver top performance for its application. Check the paddock below for individual blood lines.

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INTEGRALS
The workhorse of the A. O. Smith line. These open motors provide that extra amount of moisture protection. And you get quiet operation for critical noise areas along with a power reserve that pulls across adverse operating conditions. Rotors are pressure cast in one operation to provide an indestructible construction. Rotor and shaft assembly are dynamically balanced to minimize vibration. On models up through five hp single-phase, the capacitor is mounted inside the motor housing for space-saving installation, maximum protection and streamline appearance.

HERMETICS
A true thoroughbred! Rotor-stator assemblies are designed specifically for sealed compressors . . . quality-built to provide a reliable source of power for refrigeration or air conditioning, year-in and year-out. They're custom-built and dynamically-balanced for years of dependable, quiet, vibrationless service. What's more, each motor is manufactured under the strictest quality control . . . assembled and tested under controlled atmospheric conditions, ever-free of dirt and dust. Application-engineered in single-phase and polyphase, ¾ to 100 hp.

Contractors Air Problems--

(Continued from preceding page)

Consulting Engineers

What is your relationship with consulting engineers?

"Where our role ends and theirs begins. Consulting engineers, working with a 5% fee, are reluctant to take on smaller jobs. On the other hand, they are loathe to give up what they consider is their right to design the smaller jobs which normally fall to us."

"Who is to be responsible for design of the system on a 50-ton job, say? The consultant doesn't want us to handle it; he can't quite find it worth his while to do it; the manufacturer can't afford to send a factory engineer out for every 50-ton unit they sell."

"This seems to me to be one of those areas of legitimate conflict where the NEWS's suggestion that open discussion of disagreement is the best solution. I think the refrigeration contractor and the consulting engineer are going to have to fight over these borderline instances until the issue is resolved by experience."

Proper Installation

Manufacturers frequently complain that they produce good equipment but that improper installation can cause malfunction or less than optimum performance. What is your feeling about that?

"Even considering the fact that some manufacturers occasionally goof, I think we will have to admit that we can ruin a good unit by applying it improperly. Which, again, is one of the reasons we are for attempting to upgrade installation and maintenance technology by insisting on licensing."

"There is this, though; manufacturers are so reluctant to admit they have made a boo-boo. For months after we have begun sending in complaints about a new model, we keep getting literature on how wonderful the unit is. Finally comes in a little mimeographed sheet admitting the goof and suggesting the correction."

"You might tell the manufacturers for us that they are sending us entirely too much literature. We can't keep up with it all; we don't read it; we don't pass it along."

Unread Literature— Whose Fault Is That?

There was a wholesaler in the crowd. At this suggestion that there was too much literature coming out, he bristled. "Say you got a unit which the manufacturer turned out, only to find out later that it needs a crankcase heater to prevent slugging. The manufacturer sends out a piece of literature informing you of the trouble, telling you of the correction and of the availability of crankcase heaters to solve the problem. You don't take the time to read this, so your compressors keep scrambling. Is this the manufacturer's fault?"

"Why don't the salesmen do like they do for consulting engineers? Rather than just have the stuff come in direct mail, the salesman comes in with the literature, briefly tells them what it is about, then puts it in the proper binder or file."

"Will you remember it is there when you need it, if you haven't seen it yourself?"

"Sure. We've had occasion to look back at material several years old and were able to find what we needed."

"The real problem is they are sending out too much literature. Somehow they must determine what is important to us and what isn't."

"I think manufacturers are doing all they can to help the contractor. I recall when I was with ——, we scheduled free classes, with free beer, for an area where there were about 100 contractors. The first night 12 people showed up; the second week only six came. We quit."

"I'll tell you why that is. The NEWS ran an editorial on the subject a couple years ago. The trouble is that I have gone to many of these meetings which have been announced as educational only to find that they are three-hour sales pitches. It took only a few of those to sour me on manufacturer-sponsored meetings."

"Nothing is perfect. It's like complaining that a preacher talks about money from the pulpit. When else, where else, does he have all his congregation together? If a manufacturer tells you how his coils are circuited, are you going to complain because he also says he thinks his circuiting is the best damned circuiting there is?"

We could have talked all night.

BIG THINGS ARE HAPPENING IN THE AIR-CONDITIONING HEATING & REFRIGERATION INDUSTRY!

all that's best...all that's new IN '62!

PLAN NOW TO DISPLAY YOUR PRODUCTS IN THE HEART OF THE WEST'S EXPANDING MARKET AT THE 12TH NATIONAL EXPOSITION AIR-CONDITIONING, HEATING & REFRIGERATION INDUSTRY LOS ANGELES FEBRUARY 12-15 – 1962

Big things are happening in the Air Conditioning, Heating and Refrigeration Industry...over 15,000 interested prospects in a buying mood will prove it in '62!

They'll be in Los Angeles to see what's new. Don't miss this opportunity to show them... and sell them. Right now's the time to reserve space at the biggest of all ARI shows. Write, wire or call collect.

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Albert E. Manning Joins Astro Products

LINDEN, N. J. — Albert E. Manning, former international president of the Refrigeration Service Engineers Society, has joined Astro Products Corp. here as vice president of the company's national operations and service, the firm announced.

A. E. Manning

Holder of a number of patents and designer of three models of explosion-proof refrigerators for Class 1, Group C and D, Manning brings to Astro almost 40 years of professional experience.

He is a charter member of the Northern New Jersey Section of the American Society of Refrigerating Engineers (now merged with the American Society of Heating & Air Conditioning Engineers). He was also one of the organizers of the Garden State Chapter of the Refrigeration Service Engineers Society and the charter president of the chapter.

Prior to joining Astro, custom fabricator and supplier to the refrigeration industry, Manning was a member of the Occupational Safety Conference of the U. S. Dept. of Labor, serving as a representative of the refrigeration industry.

Handy & Harman Moves

NEW YORK CITY — Handy & Harman, fabricator and refiner of gold, silver, and other precious metals, has moved its executive offices after 94 years of transacting business in New York City's traditional financial district in lower Manhattan.

The company is now located at 850 Third Ave. in new executive offices which, according to J. C. Travis, president, "will enable us to better serve our increasing number of customers in many areas of the industry."

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presents
the new and
versatile

52 series

AIR-COOLED
AIR-CONDITIONER

A PRACTICAL APPROACH TO ECONOMICAL,
HIGH EFFICIENCY COOLING FOR COMMERCIAL—
INDUSTRIAL BUILDINGS . . .

advance designed for the sixties

NEW JANITROL 52 SERIES AIR COOLED AIR CONDITIONERS

Outwardly beautiful and pleasing to the eye, inwardly rugged and powerful, new Janitrol 52 Series units combine years-ahead styling and cooling performance . . . provide truly low-cost central cooling with matchless reliability and performance.

JANITROL'S ADVANCED DESIGN . . . A SAFEGUARD AGAINST PRODUCT OBSOLESCENCE!

The weatherproof, high-efficiency 52 Series condensing unit, containing all moving refrigeration parts, installs outside. Available in six basic capacities from 22,200 to 110,200 btu/hr.

Full A.R.I. certification: Every Janitrol unit meets all standards of Air Conditioning and Refrigeration Institute.

STANDARDS OF EXCELLENCE . . .

In Performance—large condensing coils assure efficient operation with outdoor temperatures up to 125°F!

In Styling—crisp, modern lines distinguish the new 52 Series. Cabinets are finished in durable, automotive-type enamel.

In Economy—The top-mounted fan bathes condensing coils in a jet stream of cooling air to raise efficiency and reduce current usage. Coils are shaded from the sun by louvers.

In Quietness—The powerful compressor is mounted on rubber-cushioned, resilient springs . . . cabinet is heated with special sound-deadening material.

In Safety—Complete overload and weather protection is provided. Enclosing grilles thoroughly safeguard children and pets.

In Servicing Ease—all components are easily accessible. Service panels can be removed without effecting operation during service checks.

MULTIPLE COMBINATIONS PROVIDE ECONOMICAL, HIGH CAPACITY COOLING

Modular cabinet design and upflow exhaust permit compact, multi-unit installations. Only the grilled, air-intake side of the cabinet requires clearance.

Any desired number of Janitrol 52 Series units may be installed together, with zero clearance between, to provide a variety of higher capacity combinations from 120,000 to over 1,000,000 btu/hr. Only Janitrol offers custom-built capacities at standard model cost!

JANITROL
year 'round conditioner

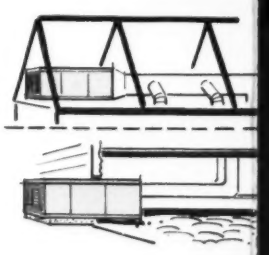
Combines quality gas heating and waterless cooling! Less than four sq. ft. of floor space needed for most installations. Features include famous Dura-Tube heat exchanger with 20-year warranty. Unique by-pass for correct air flow on heating or cooling cycle without adjustments. Powerful air-cooled 52 Series condensing unit. ADD-ON cooling—install for heating only, add cooling later.

ADD-ON COOLING

Adapts most any warm air furnace for thrifty, efficient central cooling. Cooling coil mounts in duct, attractive, air-cooled 52 Series unit goes outside. Powerful, quiet performance with outside temperatures to 125°F. Easy to install.

"J-LINE" self-contained conditioners

An economical solution for many cooling needs. One compact unit contains blower, compressor and coils. For use with ducts or as free discharge. Install through wall in crawl space, attic or other limited access locations.

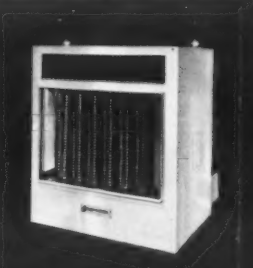


BLOWER-COIL UNITS

Smartly styled cabinet contains cooling coil and blower for use as free discharge or with ducts. Units are attached to ceiling to save floor space. Very quiet and efficient!

GAS-FIRED DUCT FURNACES

For installation in a duct where the air is circulated by a separate blower. Especially adaptable for industrial heating applications in combination with cooling. 73 Series in six sizes from 50,000 to 225,000 btu/hr. 72 Series in sizes 200,000 and 300,000 btu/hr. may be combined to provide unlimited capacity range.



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Ansul 'System Boss' Claims Higher Filtering, Drying Capacities

MARINETTE, Wis. — A new in-line refrigeration drier "with very high filtering and drying capacities, and specially built to withstand rough handling," has been introduced by Ansul Chemical Co.

Known as the "System Boss," the new drier is the product of seven years of Ansul research on refrigerant filtering, it was stated.

In line with findings that filter capacity is related more closely to filter material than filter area, the company said, the capacity of the System Boss "can be more than 100% greater than ordinary driers." Its exact filter capacity depends on refrigerant flow rate.

"There is no by-passing at all in the System Boss because the drier's fiberglass inlet pad, when full, will allow additional solids to go on to a Dutch Twill fiberglass unitized outlet filter," Ansul said. "Because of the no by-passing feature, it is not necessary to have a screen on cap tube systems ahead of the drier."

The drier is "engineered for a high flow rate resulting from a very low pressure drop." The desiccant used is Ansul's "Andrite" pelletized activated alumina.

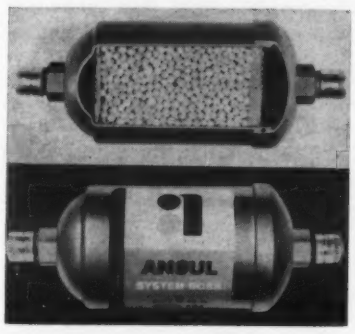
"As an example of the low pressure drop, a 16-cu in. System Boss with a ⅝-in. fitting, at air conditioning rates of flow and 2 psi pressure drop, can handle 10.3 tons flow of R-12 or 13.8 tons flow of R-22," the company stated.

"Because of its unique flow characteristics, it is often possible to use a smaller sized System Boss than customary in a given refrigeration system. However, the sizing of System Boss driers is rated by ARI's standard 710 method and its dimensions are standardized and interchangeable with other accepted OEM drier usage.

"The rugged construction of the System Boss drier permits its use under any type of operating vibration conditions. It is spring loaded putting the entire desiccant bed and filtration system under pressure of 25 psi. With the pelletized Andrite, this creates the effect of a molded desiccant without the drawbacks of fragility or powdering.

"Metal end caps, torque wrench tightened and containing neoprene seats, protect flares and guard them from damage if the drier is dropped. The metal caps also prevent damage to the fittings which often occurs when removing plastic closures.

"The System Boss has corrosion resistent metallescent finish and a high bursting strength of 2,500 psi as a standard feature."



CUT-AWAY version of Ansul's new "System Boss" drier shows "Andrite," a pelletized activated alumina which, with its filtration system, is spring loaded under a pressure of 25 psi. This creates effect of a molded desiccant without danger of fragility or powdering.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

Charts Supply Data To Aid Engineers Specify Exact Insulation Thickness

NEW YORK CITY—A practical means for specifying the exact thickness of thermal insulation needed for maximum economy reportedly has been achieved by engineers at the Union Carbide Chemicals Co., South Charleston, W. Va., in cooperation with the College of Engineering, West Virginia university.

The system is said to be applicable to any type of heat-using industry anywhere in the world.

Substantial yearly savings are predicted for large firms with several facilities when the new system achieves wide application.

One calculation that encouraged Union Carbide to undertake the study showed "realizable savings of up to two dollars per foot of line per year with the proper thickness of installed insulation.

"By referring to charts instead of laboriously working out complex mathematical formulas," it was stated, "an engineer can quickly find the solution for any of billions of possible combinations of variables, involving cost of heat energy, cost of insulation, cost of capital at various periods of amortization, and conductivities of various insulations at different temperatures."

In connection with announcement of the system, the National Insulation Manufacturers Association said it will publish the manual, "Economic Thickness of Insulation for Flat Surfaces and Pipes," for general distribution.

To be available June 15 from NIMA, 441 Lexington Ave., New York 17, N. Y., at $10 per copy, the manual will give economic thickness for maximum savings in any heat-using plant with capital investment of $2-$18 lb steam/hour, a spokesman said.

Witco Chemical Names Bornscheur To New Post

NEW YORK CITY — Witco Chemical Co., Inc., has announced the appointment of Harry R. Bornscheur as assistant general sales manager of its Pioneer Products Div.

In his new post, Bornscheur is responsible for Pioneer's eastern sales and for the coordination of new-product merchandising in the protective-coating field.

LARKIN WATER SAVERS ARE MONEY MAKERS HERE'S WHY...

Contractor-dealers throughout America are making money with LARKIN WATER SAVER COOLING TOWERS. *Here are 4 reasons why:*

1. QUALITY CONSTRUCTION
Larkin's reputation is staked on every unit. Durably built to last for years.

2. LOW INITIAL COST
You can make lower bids, save customers' money without sacrificing quality or efficiency.

3. RELIABLE PERFORMANCE
The entire wetted surface of redwood is designed for maximum cascading of water, which results in conservative ratings and top performance.

4. EASY SERVICING
Bolted construction permits easy access to all parts. Your profit is not eaten up in excessive service time.

Favored Features

- Wetted surfaces of all-heart redwood nailless interlocked construction. Easily removed.
- 16-gauge steel panels; 12-gauge steel sump.
- Mastic-coated interior. Exterior finished with epon-base, zinc-chromated primer and two coats melamine baked-on enamel.
- All models equipped with hot-dip galvanized propeller fans. Centrifugal blower optional on all models through 20 tons.
- Two and three-ton fan models have direct drive, totally-enclosed motors. All others are belt driven with drip-proof motors.
- Centrifugal blowers have self-aligning graphited bronze sleeve bearings mounted on outside for easy lubrication.
- Belt-driven propeller fans have stainless steel shafts, oil-impregnated bronze bearings with oil line and cup.
- Gravity-type distribution basin—low pumping head over tower.
- Water outlet in sump has large strainer and anti-cavitation plate, easily removed for cleaning.

CAPACITY DATA* 3 GPM/TON

Model	Wet Bulb °F / Inlet Water °F / Outlet Water °F	78° / 95 / 85
2 WS	TONS	2.0
3 WS	TONS	3.1
5 WS	TONS	5.1
8 WS	TONS	8.1
10 WS	TONS	10.0
16 WS	TONS	16.1
20 WS	TONS	20.0
25 WS	TONS	25.1
30 WS	TONS	32.2
40 WS	TONS	40.0
50 WS	TONS	50.2

*Based on Tower Rejection of 250 BTU/MIN/TON

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Or write for Bulletin 1030-D

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World Trade Poses Ever-Changing Challenge

Politics, Taxes, Law, Shipping, Customs

By Frank J. Versagi

NEW ORLEANS—To prosper in world trade, one must know so many things: politics, tax structures, international law, shipping, foreign customs. Many are called, few are chosen.

In fact, some of the attendees at the recent Mississippi Valley World Trade Conference here estimated that the number of people in world trade, as indicated by the number attending past conferences, is down about half. "When the domestic market gets rough, it seems so tempting to go overseas for business. Luckily for those of us who are in it in a big way, export business is not that simple," stated one manufacturer's foreign representative.

Attending the conference were agents, consuls, merchants, shippers, lawyers — all with some interest in the many faceted world market for everything from naval stores through refrigeration to foodstuffs. Much of what was said both in formal presentations and in bull sessions is generally valid and may be applied by any industry. Many of the participants in the bull sessions did not know that the press was present and, for that reason, several comments are used anonymously.

One of the most interesting formal discussions was by Riichi Takahashi, Sub-Manager, New York branch of Mitsui & Co., Ltd., who spoke frankly of Japanese-American trade relations.

Japan's Role Looms Large

"*Made in Japan* is no longer synonymous with *cheap but no good*," Takahashi stressed. "Many of the products reaching the United States now are first-quality items; this includes cameras, binoculars, watches, and precision instruments."

The United States imports more goods from Japan than from any other country except Canada, the Japanese admitted, but "At the same time, the United States exports more to Japan than to any other country, again with the exception of Canada." And the balance of trade between Japan and the U. S. is in America's favor by $432 million, he stated.

"In other words, Japan—after Canada—represents the biggest market in the world for American foreign trade."

Touching on the American complaint that Japan's lower labor rate makes it impossible for American companies to match prices with Japanese imports, Takahashi insisted that there have been instances, he cited aircraft parts, where American companies attempted to purchase Japanese components for assembly here only to find that the total cost left no savings over having the components produced by American labor.

The reason for this, as the Japanese businessman sees it, is that although Japanese wages may be about one sixth of American wages, "it takes five Japanese, working manually for the most part, to turn out as much as can one American worker in his automated plants."

A few manufacturers' agents at the conference complained that if they get too successful, they lose their accounts. Here's how. "Say I'm selling for Company A. I get the accounts going, build up a good volume. Some office manager back at the plant suddenly decides that for less than the commission they are paying me, they could have their own men covering the territory. So they drop me."

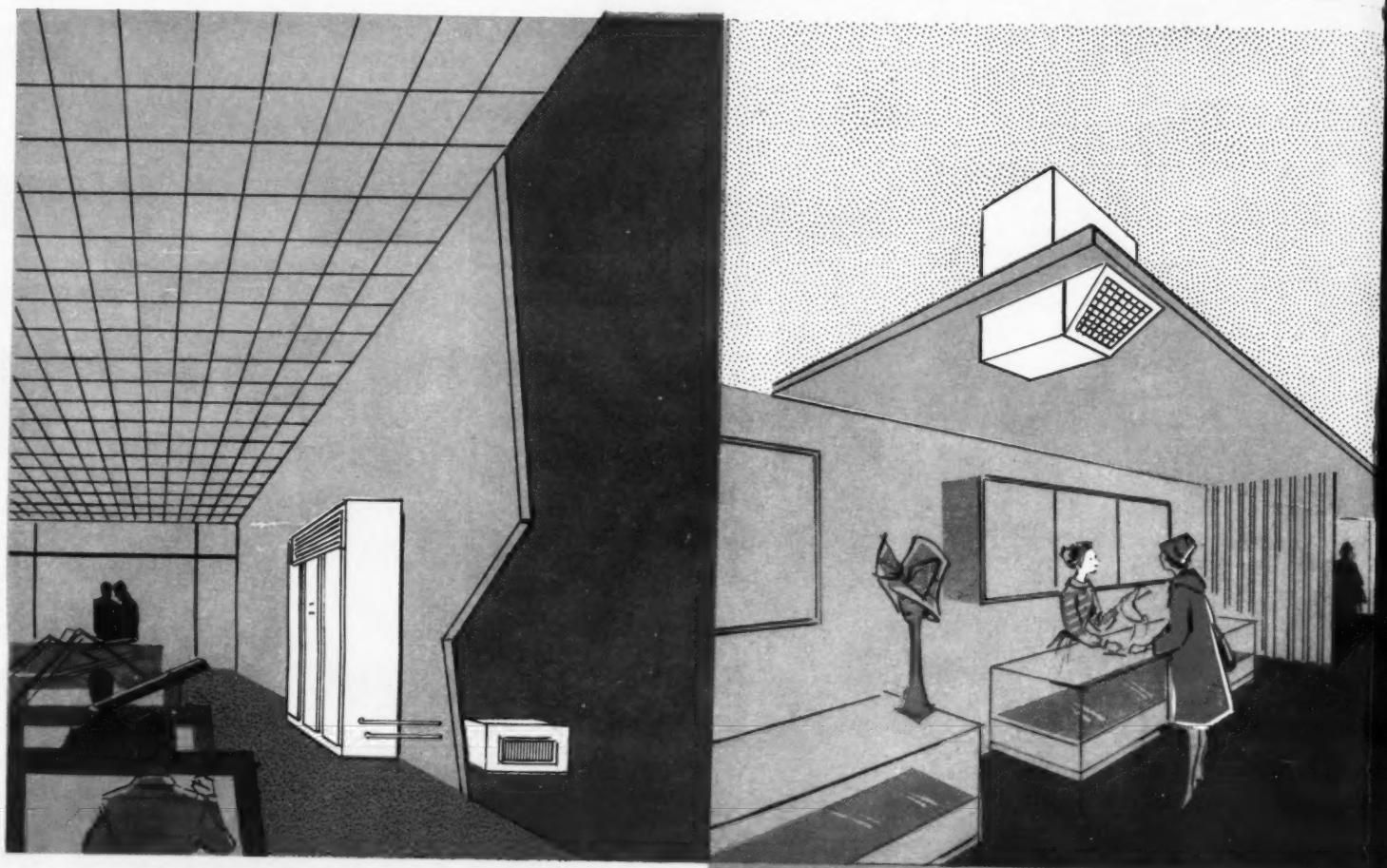
Large American manufacturers are unintentionally placing a protective umbrella over some of their smaller competitors in the world trade market, according to some attendees at the conference.

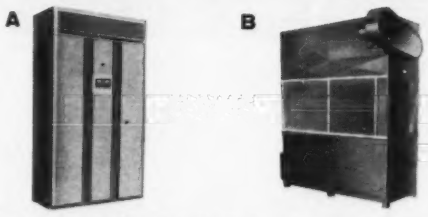
"The larger manufacturers are geared up for mass production of items which the American consumer wants. These items aren't always what the foreigner wants. So the little fellow, who doesn't have to worry about turning off a profitable spigot, can make the unusual or different item for the foreign account. He beats us two ways; he has what we don't have, and he can sell it cheaper than we if we had to shut down our lines to switch over to make it."

This same point — that foreigners seldom want what is customary over here—is the reason that many American companies can't get into world trade. "They simply don't make anything which the world needs yet." Then, too, "We make a gas range, say, with a rocket ship control panel and enough chrome to trim a car. The Latin American or Eastern customer wants a simple stove that will cook food."

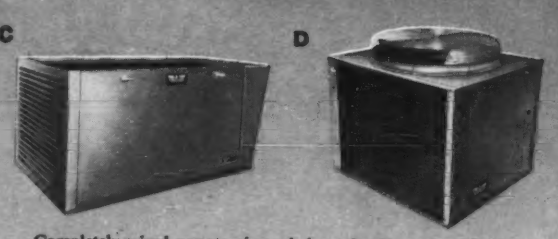
Latin America, naturally, came in for much discussion. There is a strong concurrence of opinion among the apparently knowledgeable that more countries in Latin America will go Socialist or Communist.

"How many times I have pleaded with some of the American companies I represent," complained one representative, "to make new arrangements in Latin America, to give the





Water and air-cooled packaged units from 3 to 60 tons are compact, stylish and functional for in-space or remote application.



Completely wired remote air-cooled condensing unit with blower-coil units through 20 tons are ceiling-suspended or ducted to conditioned space.

"FULL CHOICE" PACKAGES—MOST

PACKAGE TYPE	POSITION	ILLUSTRATED ABOVE	NOMINAL TONNAGES										
			3	5	7½	10	15	20	25	30	40	50	60
WATER-COOLED PACKAGES (Self-Contained Systems)	IN CONDITIONED SPACE												
	Floor-Mounted Vertical	A, G	•	•	•	•	•	•	•	•			
	Ceiling-Mounted Horizontal	G	•	•									
	REMOTE LOCATION												
	Floor-Mounted Vertical	A, B, G	•	•	•	•	•	•	•	•	•	•	•
	Floor-Mounted Horizontal	B, G		•	•		•	•	•				
	Ceiling-Mounted Horizontal	G		•	•								
AIR-COOLED PACKAGES (Split Systems)	REMOTE LOCATION												
	Floor-Mounted Vertical	A, B, G	•	•	•	•	•	•	•	•	•	•	•
	Floor-Mounted Horizontal	CD	•	•	•	•	•	•					
	Ceiling-Mounted Horizontal	CD	•	•	•	•	•	•					
	Floor-Mounted Multizone	F						•	•	•			
AIR-COOLED PACKAGES (Self-Contained Systems)	REMOTE LOCATION												
	Roof-Mounted	E		•	•	•	•	•	•	•			

country majority control of the operation, to retain minority holdings and to supply management."

The masses of people in Latin America have been without for too long, this man feels. To the objection that there would be insufficient profit in giving the country majority control, he says, "When the Cuban-type revolution comes, as it must in many of these countries, there will be no desire to confiscate property which is already theirs. What happened to all the totally American owned plants in Cuba; where is their profit?" he asks.

"Whether we are trying to sell refrigerators or food, we must do what we can to get a distribution of wealth in these countries. If we don't help them, they will turn elsewhere. This is not a threat; it is merely a fact of life," warned one Latin American diplomat.

Not only is it impossible any longer for extremely wealthy and extremely poor countries to co-exist in peace, but it is becoming impossible for a country to remain stable politically when wealth and social progress is in possession of a very few of the citizens, stated another spokesman.

The Latin American countries are attempting to help themselves. A type of common market is already emerging from Central America. "The only alternative to economic stagnation for such countries is integration and merging of national interests," offered Dr. Manuel Noriega Morales, chief, Dept. of Technical assistance, Inter-American Development Bank.

Repeatedly, discussions at the Missippi World Trade Conference made it clear that to operate profitably in the world market requires more than the desire for profit; it requires a working knowledge of the aspirations and politics of the people with whom one intends to do business.

Switcheroo

Firm To Make Canadian Products In U.S.

CHICAGO — A joint Canadian-American business enterprise is reversing the usual procedure with the incorporation of a new business in the United States to manufacture the products of a Canadian firm.

Sheldons Mfg. Corp., 20 N. Wacker Dr. here, has been formed to produce and market in the U. S. the ventilating and air conditioning equipment designed and engineered by Sheldons Engineering, Ltd., Galt, Ont.

Sheldons Mfg. will establish manufacturing facilities at Bensenville, Ill., less than 20 miles northwest of the Chicago Loop. Using designs of the Canadian firm, it will produce a full line of fans and blowers for industrial, mining, commercial, and agricultural application.

The Bensenville plant is scheduled to start operations June 1. Sales will be through established U. S. manufacturers' representatives.

Sheldons Engineering, in its 66th year, has engineered and built some of the largest air-handling products on the North American continent, the announcement said.

Four principals of the Canadian firm and four Chicagoans, experienced in the ventilating and air conditioning business, have joined to form the new U. S. corporation, it was stated.

William D. Sheldon, president of the Canadian company, will serve as chairman of the new firm. George M. Egoff, Canadian vice president and managing director, has been named president of the U. S. operation. A third Canadian, M. Paul Greenhill, Galt, Ont., is secretary.

The four Chicagoans in the new U. S. firm are Arthur P. Rosenquest, vice president; Verne F. Launspach, treasurer; Robert O'Connor, a director, and Fred Balzer, a director. All will be engaged in the active management of the U. S. firm.

In addition to the two Chicagoans so named, the eight directors include Sheldon, Egoff, Rosenquest, Launspach, and Harold W. Mogg and William C. Caldwell, both of Galt.

Three additional directors will be elected at a later date.

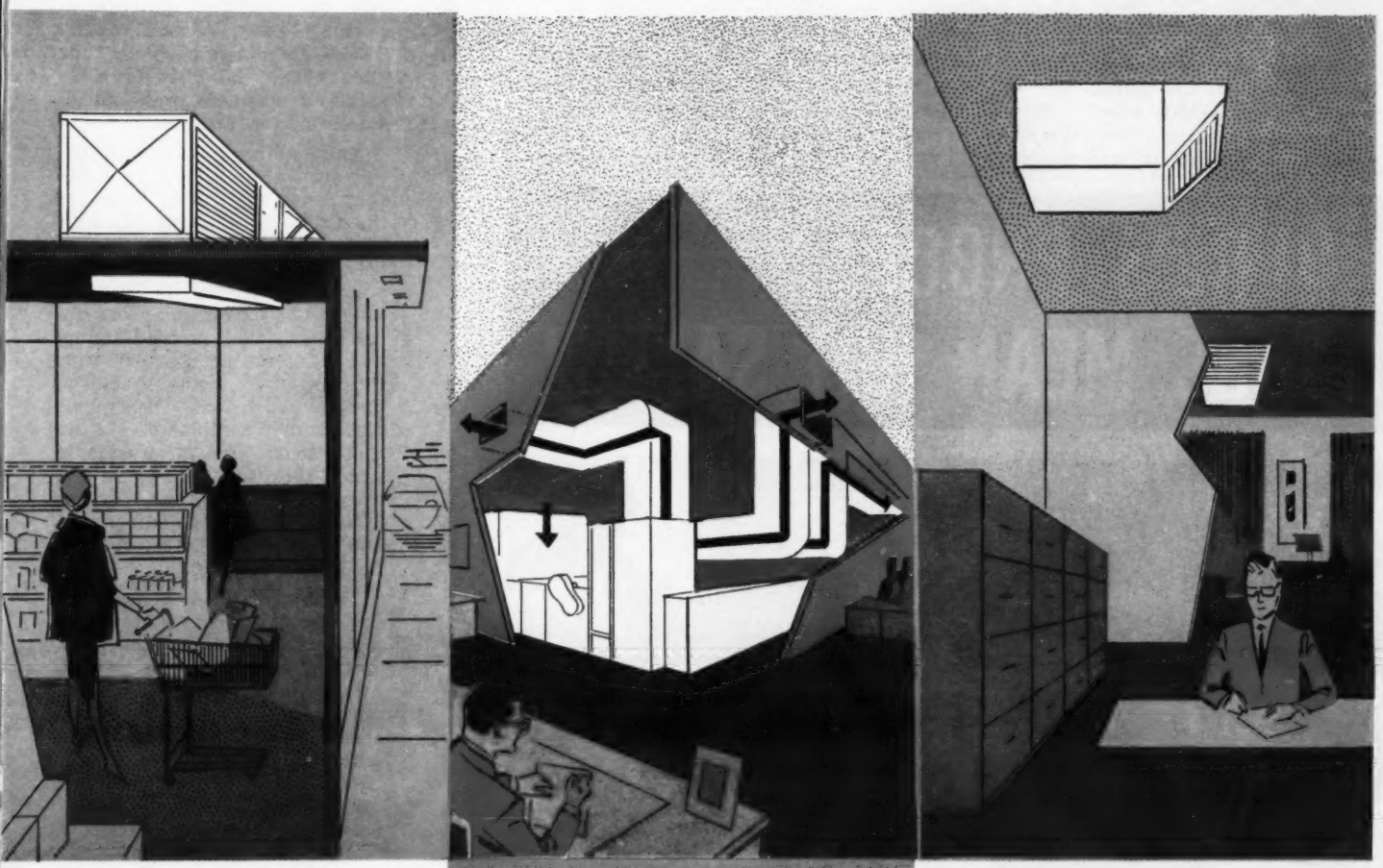
Rosenquest has for the past seven years served as chief engineer with Chicago Blower Corp. O'Connor and Launspach, associated as Airfoil Products Corp., Chicago, have been manufacturers' representatives. Balzer has for 11 years been the principal in Fred Balzer Co., Chicago, representative for air conditioning equipment manufacturers.

Ucon Refrigerants To Be Exported by Ansul

MARINETTE, Wis. — Ansul International Corp., S. A., has been appointed as international reseller for "Ucon" brand fluorinated refrigerants by Union Carbide International Co.

Ansul plans to distribute the refrigerants in 43 countries, handling Ucon 11, 12, 113, and 114. The company is making special arrangements with its overseas distributors so that the return of the cylinders and the refund of deposits can be accomplished as conveniently as possible for customers in every country, it was stated. The 43 countries are:

Mexico, Chile, Bolivia, Philippines, Korea, Brazil, Argentina, Spain, Honduras, Guatemala, France, India, Italy, Japan, United Kingdom, Germany, Ceylon, Pakistan, Finland, Netherlands, Norway, Sweden, Denmark, Austria, Switzerland, Curacao, Cuba, Puerto Rico, Jamaica, Colombia, Uruguay, Panama, Costa Rica, El Salvador, Nicaragua, Peru, Venezuela, Egypt, Union of South Africa, Iraq, Turkey, New Zealand, and Martinique.



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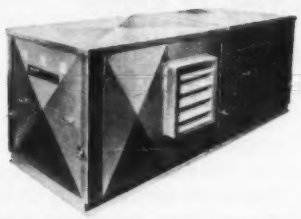
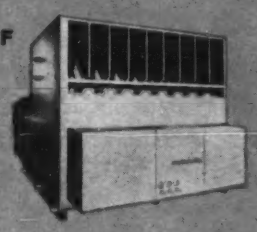


Up to 35 tons in a single package for year 'round cooling and heating—using gas, oil or steam for heating.

F



Compact, low-cost answer for true multi-zone system. Offers individual zone control from zero to one hundred per cent of system capacity.

G

Flexi-Cool units, water- or air-cooled, for ceiling suspension are completely self-contained and can circulate directly or through ducts.

COMPACT, EASIER TO INSTALL

From estimate to final installation, there's no easier line to use than Worthington "Full Choice" packaged air conditioning units. Why? For virtually every job, Worthington supplies more than one packaged system to make your work flexible, fast and profitable.

Size for size, based on nominal tonnages, the "Full Choice" line is the most compact available today. Over forty models can be designed to fit virtually any space to air condition, dehumidify and heat, too, if desired.

Units may be floor-mounted or ceiling hung, either in conditioned space or remotely. An outdoor system can be roof-mounted or located at ground level on a suitable base. Use with or without ducts—get a variety of air discharge patterns with interchangeable grills and louvers. Special units with inherent capacity control handle multi-zone or special design situations.

To make design and selection easy, Worthington has complete information on this packaged "Full Choice" line in the booklet shown. Pricing is also simple and competitive.

You'll find these units install for less, too. Every possible step has been done at the factory. Water-cooled units are shipped factory assembled, internal piping and wiring is complete and refrigerants charged. Air-cooled units are split systems, shipped in just two pieces. Only utilities and ductwork, if required, must be supplied.

For full information, ask your Worthington representative for the booklet shown here. Or write Worthington Corporation, Air Conditioning Division, Dept. 12-45, East Orange, N. J. In Canada, Worthington (Canada) Ltd., Brantford, Ontario.

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PRODUCTS THAT WORK FOR YOUR PROFIT

What They're Saying, Doing

On the Industry's Firing Line Today

THIS COLUMN SPOTLIGHTS current outstanding activities and thought-provoking attitudes of those who are engineering, selling, installing, and servicing the industry's products.

Contractor Scores Manufacturers Who Sell Direct, Upset Normal Channels

By Phil B. Redeker

SAN FRANCISCO—"This is the sort of thing I don't like to see," said Charles Scatena, of Scatena York Co., San Francisco, holding up a "special" price sheet on copper tubing put in his hands by a manufacturer of air conditioning equipment.

"Sure, this price is lower than that which we get from our supplies wholesaler—it might even be lower than his cost. But that doesn't mean we are going to buy copper tubing at this special price.

"Why aren't we likely to? There's one good reason right out there at our receiving dock now," said Scatena, pointing at the truck of an air conditioning refrigeration supplies wholesaler establishment. "This supply house caters to our needs, and will deliver materials when and where we need it, even though often it may be at odd times. Another thing, because this supply house wants to keep on doing business with us, it will use every precaution to see that the supplies and materials we get will be in the best possible condition, and will make good on it if it isn't.

"The firm that offered us the copper tubing is a reputable company, but it is not in the business of furnishing supplies for air conditioning, heating, and refrigeration contractors."

The particular situation cited is deplored by Scatena as a specific example of how one element in the air conditioning, heating, and refrigeration field tries to go beyond the bounds of its normal sphere of activity. In so doing, it undermines the effectiveness of other factors and disrupts orderly distribution of the industry's products.

He also views it as part of a disturbing trend by all kinds of manufacturers to go direct in selling their products.

"I don't see how they think they can do this and get adequate sales representation or responsibility on service, but some of them seem determined to keep trying it," Scatena says.

Some manufacturers, he points out, complain that they can't find ready-made distribution in the less populated and remote areas. What excuses them, he wonders, from making an honest effort at trying to take a small but competent service contractor in that area and building him into a merchandising and servicing dealer?

Isn't that a better way to build their business and protect their reputation than to sell direct, letting the responsibility for proper operation and service fall to whomever the contractor may call in on the job, Scatena asks.

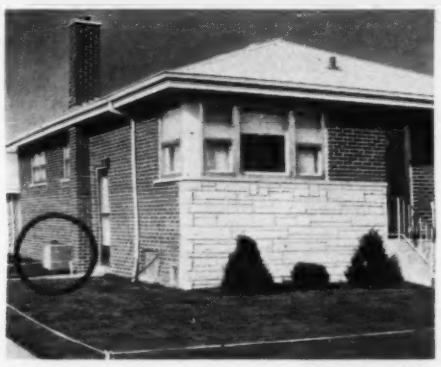
"In commercial refrigeration, the attitude of some manufacturers is that they must sell direct to the chains, because of the competitive price factor. In such instances, the manufacturer may give the distributor of his equipment in the area the installation contract, and then expect him to handle all the in-warranty service and to deal with customer complaints that develop from the use of the manufacturer's equipment.

"But is this enough to justify the distributor taking all of the service responsibility? Perhaps if the distributors got together and told the purchasers to call the manufacturers direct when confronted with some deficiency in the operation of the equipment, rather than calling upon the contractor to put it in working order, the manufacturers might change their attitude and permit the distributor to make an adequate profit on all sales made in his area."

Another trend in the distribution of the industry's products that concerns Scatena comes in the financing of some types of large installations. There has been a growing tendency, he points out, to try to lump all kinds of extraneous subcontracts into the air conditioning and refrigeration contract, thus imposing an unfair financial burden upon the contractor whose only interests are in those fields. This is an area in which the contractor must find his own solution, but Scatena hopes that the manufacturers will back the contractor who holds firm against this.

"If the various elements in the industry would settle down and tend to their own business, and not try to get over into the other fellow's area of activity, maybe we could then concentrate on our big job—selling what our industry has to offer against all the competition offered by other industries and services," Scatena concluded.

HERE'S PROOF! COOL HOUSES MEAN HOT SALES!



"No other built-in has the impact that air conditioning has had on my sales," reports Arnold Levy, Chicago builder. Mr. Levy also says that more than 50% of sales are from friends and relatives of present homeowners.

Short supply and return air ducts connect the Thermo-Center heating and cooling equipment to trunk ducts which run the length of the house.

In 20 minutes, two men connect cooling unit to furnace through a prefabricated wall sleeve. Equipment costs are reduced . . . no refrigerant piping to worry about. Factory-designed connection insures proper operation.

Here's dramatic evidence that the Carrier Thermo-Center heating-cooling installation boosts house sales for your builder-customers. Look at the impressive results Arnold H. Levy, builder of Chicago's Castle Homes, obtained with the Carrier Thermo-Center:

- in the past year, sales of Castle Homes were up 20% while Chicago house sales in general were down 30%.
- appraised value of Castle Homes has risen considerably . . . more than the low cost of the Carrier Thermo-Center.
- banks allow a proportionately higher mortgage.
- builder, as a result, need offer much less secondary financing.

And here's why Carrier Thermo-Center is specified on all Castle Homes:

- no water supply or drain piping.
- no refrigerant lines.
- simplified ductwork and wiring.
- simplified through-the-wall mounting of air conditioner with prefabricated wall sleeve and transition assembly.
- less installation time and labor.
- less than five square feet of valuable floor space.
- fits next to an outside wall, saving more floor space.

Other builders throughout the country report the same results—the Carrier Thermo-Center costs little more than a heating installation . . . costs less than many other heating-cooling installations . . . requires minimum servicing . . . and is a tremendous sales feature.

This is the season when the Carrier Thermo-Center can be an emphatic sales clincher for you. Get the full story today on Thermo-Center applications for all the houses your builder-customers are erecting—ranch, split-level or multi-story homes. Call your Carrier distributor listed in the Yellow Pages. Or write Carrier Air Conditioning Company, Syracuse 1, N.Y.

Carrier *Air Conditioning Company*

Horter To Retire From Cutler-Hammer Post at End of Year

MILWAUKEE—Plans to retire at the end of the year after 46 years of service with Cutler-Hammer have been announced by B. M. Horter, director of purchases.

In an accompanying announcement, Philip Ryan, president, stated that F. A. Wright has been named to the post of purchasing agent, with responsibility for all purchasing functions. Ryan said Wright's appointment "is being made at this time so that transfer of responsibility can be accomplished efficiently."

Wright has been general sales manager since 1958.

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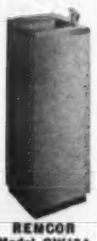

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Coil Freeze-Ups

How Much of a Problem In Commercial Buildings? Who's Responsible for Repair and Property Damage?

By Frank J. Versagi

MIAMI BEACH, Fla. — How much of a problem is freeze-up of air conditioning coils and heating coils in commercial buildings? Are there any causes common to such freeze-ups? Who should be held responsible for coil repair and property damage which results from freeze-ups?

These questions were discussed in a panel-forum meeting during the recent 72nd annual convention of the Mechanical Contractors of America, Inc.

Because they consider the topic controversial, a couple of the speakers asked that the NEWS not identify any of the speakers. Here, however, are pertinent portions of the discussion which took place.

A questionnaire had been sent, prior to the meeting, to all members of MCA. The panel moderator expressed disappointment that only 35 questionnaires had been returned in time for analysis. Of greatest interest in the analysis of these 35 returns was the determination of who ended up paying for the damage:

12 were paid for by the mechanical contractors involved;

10 were taken care of by the owners;

5 didn't know who had paid;

3 are still under negotiation;

2 were paid for by an insurance company;

2 were taken care of jointly by the mechanical contractor and the manufacturer.

Cost of correcting the equipment varied from $75 to $15,000; cost to repair property damaged ranged from "minor" to $40,000.

Time for Frank Discussion

Several of the panel members agreed that the time is overdue for a frank discussion of the problem of freeze-ups. One claimed that ASHRAE and ARI have expressed interest in pursuing the topic. A spokesman for an owner expressed gratitude that "a responsible organization has finally decided to look into the problem which owners, consulting engineers, and mechanical contractors have shunned till now through embarrassment."

This owner spokesman estimated frankly that "about half" of the freeze-ups he has experienced in some 15 years "could have been prevented by our operating personnel."

Trouble Can Be Mechanical or Human

The mechanical contractor on the panel suggested that coil freeze-ups can be classified into two categories: "Those due to physical components—like those caused by fatigue or malfunction of a pressure valve or a thermostat or a sensing element. And improper selection and installation, too."

In the second category, the contractor listed "human components" — Freeze-ups due to negligence or ignorance; these in turn due, he offered, to failure to brief operating personnel, failure to provide adequate procedure instructions.

Heating Coil Freeze-Up

Although the panel discussion was billed as a treatment of air conditioning coil freeze-ups and was set up by MCA's air conditioning and refrigeration committee, much of the discussion was about the freeze-up of *heating* coils.

Of these it was said that "95% of coil freeze-ups occur during construction." Another panel member said that about ⅓ of heating coil freeze-ups occurred during construction, when temporary heat is being used. "Another third take place during periods of shutdown—weekends, nights, vacations; the final third take place during normal operating hours."

This last speaker suggested "There is apparently much confusion about the cause of such freeze-ups. The industry has not always utilized the solutions which are available, and they are available," he insisted.

From the several panel members came some common thoughts on the prevention of freeze-ups in heating coils:

Train the operating personnel; several instances were cited where such personnel closed the wrong valves at the wrong time, or pushed a button when they shouldn't have.

Operate the water pump continuously — "Water will not freeze so long as it is kept moving and is at least warm." Use a flow alarm to warn of any flow stoppage.

Control the supply of outside and return air to the coil so that stratification does not cause one section of the coil to freeze because of low temperature outside air.

Watch air flow patterns, because even the change in flow effected by damper modulation can throw stratified air against a coil.

Check outside dampers. Worn linkage has been found to cause air leakage, with subsequent freeze-up.

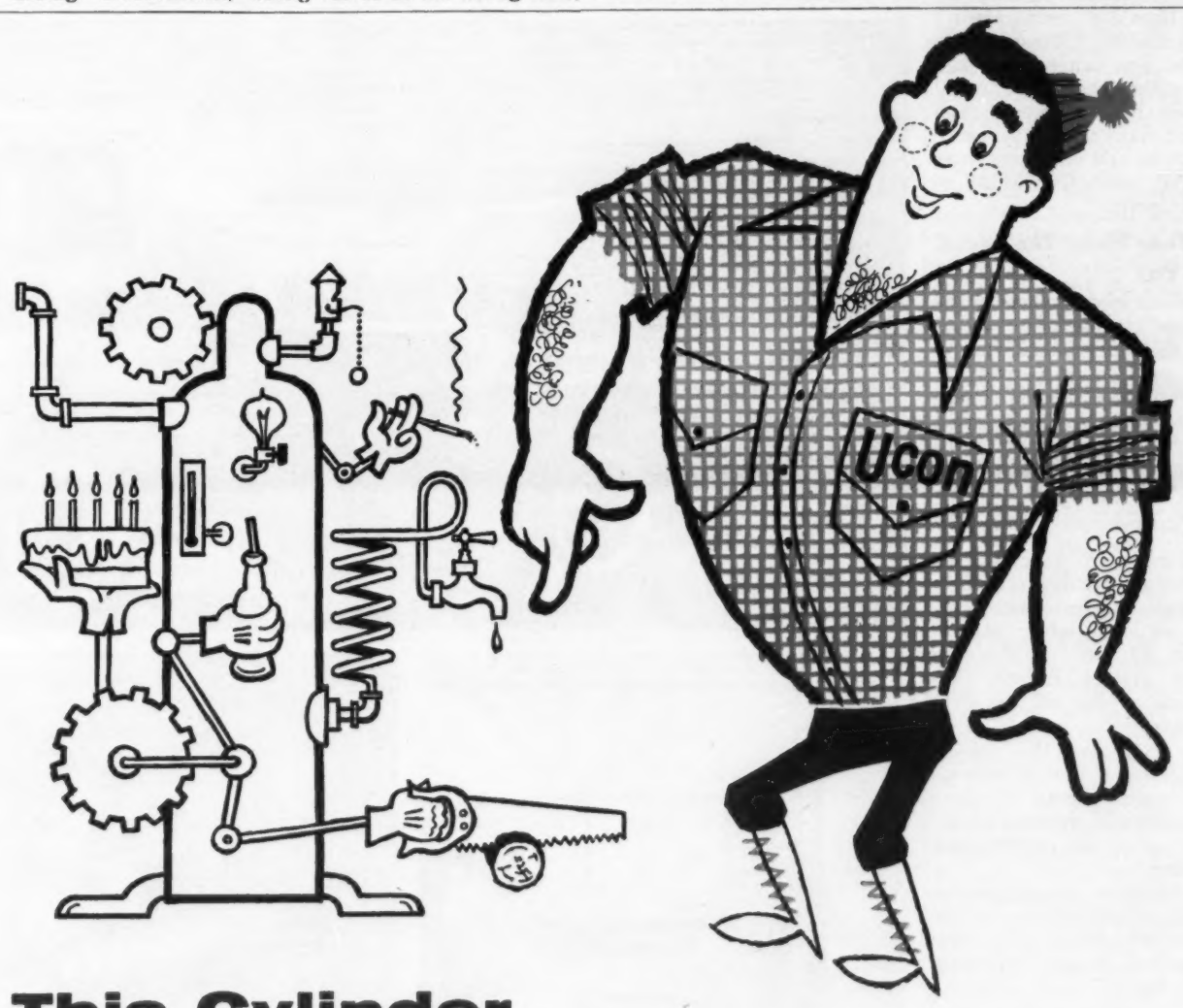
Make sure the general contractor realizes the importance of leakproof and weathertight air shafts, ventilation systems.

The general feeling of the participants in the discussion was that MCA is the logical group to assemble and disseminate facts about coil freeze-ups.

Airtemp Awarded Defense Contract

DAYTON— William P. Balthrop, president of Chrysler Corp.'s Airtemp Div., announced the receipt of a $1,525,000 government contract for the manufacturing of U. S. Army tank components.

Balthrop said $1,400,000 of the contract was the third renewal of a contract originally received in November, 1959. Under this part of the contract, Chrysler Airtemp will manufacture air cleaners and ammunition racks for U. S. Army tanks. The new portion of the contract is for manufacturing of ammunition boxes.



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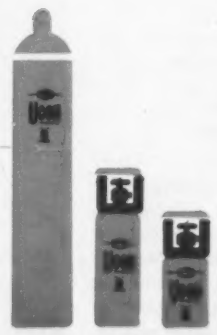

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Cooling Churches

All God's Children Need Air Conditioning

By Frank J. Versagi

MONROE, La.—He has installed his 50th church air conditioning job, and he's aiming for 100. The installations range from 7½ tons to 75 tons, and there is hardly a religious denomination in his trading area that doesn't have one of his units.

"I take that back," apologized civic-minded Curley Ketchell, "I have yet to do my first synagogue."

Ketchell is president of Climate Control, a General Electric key dealer in Louisiana who installs air conditioning in residential and commercial installations, but who seems to have a fondness for churches.

"I much prefer selling an owner than a contractor," Ketchell admits. "When selling an owner, you can sell up, sell quality, rather than have to sell down, sell price. Even though they don't have money to spare, most pastors and ministers want a good job when they think of air conditioning."

Once They Hear The Word, They Pay

And what makes them think of air conditioning?

"One colored preacher put it as well as I have heard," recalls Climate Control's president. "He said, 'I've got to get them here to preach the word to them; once they've heard the word, they pay for the air conditioning when I pass the plate.' "

This particular preacher purchased his air conditioner on 3-year terms, but attendance increased so much after the installation of air conditioning that the greater income permitted his paying off the debt in 22 months.

"This has been the experience of quite a few churches," Ketchell said. "Many of them report a definite increase in attendance after air conditioning is installed."

Why would a church go for full air conditioning, rather than for ice storage or some other method of supplying only Sunday cooling?

"They have the experience of other churches to go on," answers Ketchell. "Once air conditioning is installed, the church finds more frequent use — for choir practice, for church society meetings. The church becomes a civic center of a sort.

Churches Compete For People's Time

"Remember, too, that churches are competing for people's time now. I think it is significant that only one of the 27 churches in the Trenton Baptist Association is not air conditioned . . . and they're looking." (The Trenton Association centers around Monroe.)

Another factor which is helping sell air conditioning to churches, he feels, is that the cost of air conditioning has come down considerably in the last several years. "It wasn't too long ago, remember, that commercial air conditioning cost about $900 a ton. So a 5-ton job set you back $4,500. Today you can get almost 10 tons of cooling for that money.

Climate Control does all it can to get the church to use insulation, "getting the church ready for air conditioning," Ketchell calls it.

Four and 6-in. insulation can make the difference between just being able to pay off the air conditioner and being able to pay off the unit price *plus* operating costs. Most of Climate Control's 50 church installations have been in existing buildings. Ketchell prefers blown to batt insulation.

Asked if he has a favorite type of installation, Ketchell laughed, "I've run air handling systems under slabs, overhead, under rostrums; we've used perimeter systems and overhead systems. You never know what you will encounter in an existing church." Where he can, though, he will install a perimeter system. But improvision is a must.

Although the trend is now toward air-cooled equipment, most of Climate Control's 50 church jobs are water cooled; most use a tower for water saving. Another trend comes and goes, Ketchell feels. That is, "for a while *everybody* installs packages, then they all switch to built up systems, then back to packages."

How did Climate Control become so dominant a factor in church air conditioning in its trading area? Obviously not by selling price, for during another portion of the interview Ketchell substantiated for the NEWS his claim that he refuses to take a job unless he can make a profit.

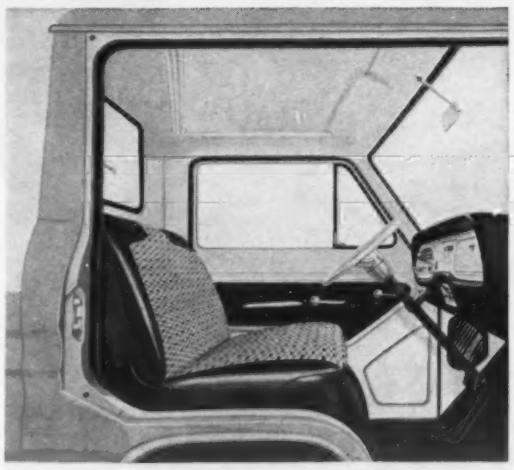
"Of course, doing a good job is the best advertisement. Church people talk among themselves, and it is not unusual for members of the same church association to call me after hearing about an installation I made."

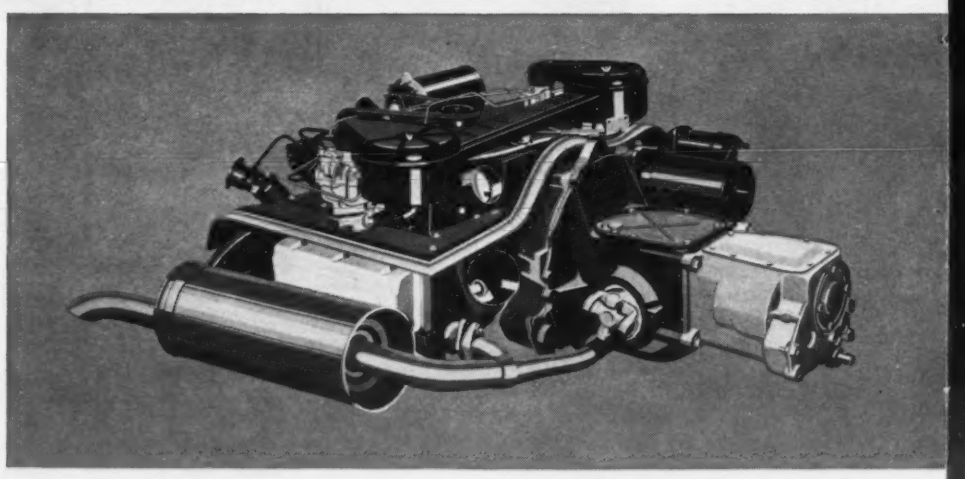
But Climate Control does not rely merely on word of mouth advertising. Ketchell advertises regularly in the "Business Review" section of local newspapers. "Although the rate is higher than normal advertising, you get a picture in regularly, and you can write your own copy for an editorial-type ad." It has been Climate Control's experience that this advertising invariably brings inquiries.

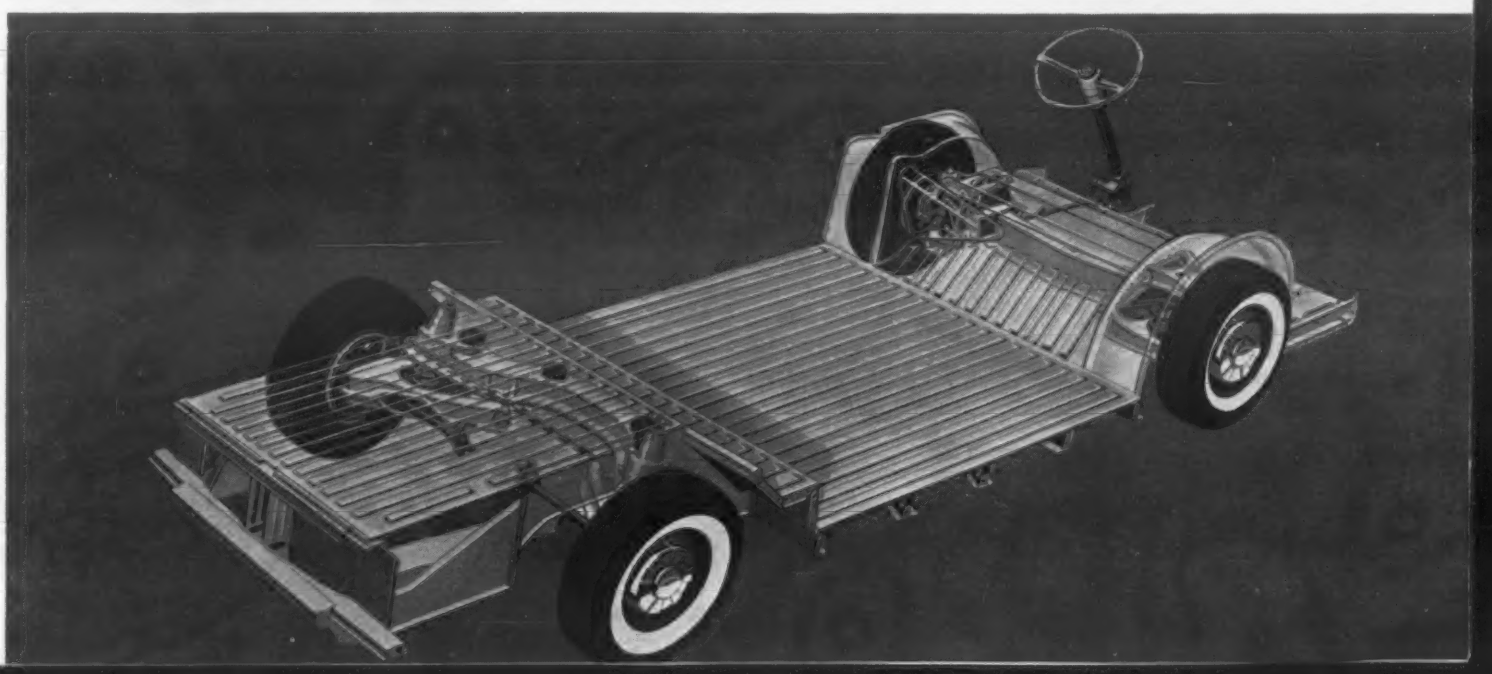
Talking of radio advertising, Ketchell opined that "saturation spots on a weekend" are the most effective way to get response.

More and more, he finds, the inquiries come from people who ask a lot of questions, questions which clearly show that some of the industry's advertising has paid off. "There are always questions about humidity control, for example." Incidentally, Ketchell believes in sizing borderline cases so that the unit runs most of the time, rather than oversizing it with the resultant loss of humidity control.

Climate Control offers Gen-







eral Electric financing to churches and other qualified customers.

But church air conditioning isn't all that Climate Control does. Residential cooling gets a lot of play in this area, although once more—because of his preference of working with the owner, rather than a contractor—Ketchell will not bid on speculative work.

Big Equity Creates Best Home Cooling Prospects

He finds his best residential prospects are those homeowners who have so much equity in their houses that they can't possibly get it out, so they go all the way in remodeling; this always includes air conditioning. "With this kind of customer, again, I can sell quality, not price."

But Ketchell frequently runs into problems. "Do you know that a 75,000 Btu input furnace with 5 outlets can go in, complete, around here for about $250? Can you imagine trying to add air conditioning to such a system?"

Suggestion for FHA

Ketchell feel strongly that the Federal Housing Administration should formally require that heating systems be so designed that they can be adapted to air conditioning. "After all, for less than $50, while the house is in construction or while the heating system is being installed, you can put in the right size ductwork, an adequate plenum. After the fact, changing over may cost hundreds of dollars."

At this point, a serviceman asked to see Ketchell. He had been out checking a 6-ton unit which was kicking out the circuit breaker.

When first given the complaint, Ketchell had told the building owner that something other than the unit must have been put on the line. "Nothing but the air conditioner is on that breaker, take my word for it," was the reply. Ketchell's serviceman found the amp draw at the circuit breaker was 19½ amps at a time when the unit's blower was running alone and drawing only 7½ amps.

"Now the building owner will look for whatever else has been put on the line," Ketchell said.

Keeps Overhead Low

Discussing the business end of his operation, Ketchell stressed that he likes to keep overhead low. He maintains a single serviceman and a helper. (Ketchell doubles as a serviceman; he came up through that route). He has a girl for the office and, except in peak times, that's it. Ketchell does have a partner who operates the company's sheet metal facilities, but these people are not included in Climate Control's setup.

"You hear a lot of talk about good and bad dealers, about successful and unsuccessful ones. As a rule, though, if a dealer has been around for a long time, he's pretty sure to be a quality dealer," he feels. Ketchell has been around since 1953 on his own; before that he was a serviceman.

Where does a serviceman-turned-businessman learn business management? "I talk to a lot of people; I listen to a lot more," was the laconic reply.

Clergymen on Air Conditioning

A Baptist minister verified Curley Ketchell's statement that air conditioning the church increased attendance, increased revenue, and increased use of the church. "Many of my congregation live in air conditioned houses, drive air conditioned cars, work in air conditioned offices. It was the natural thing to do to air condition the church."

Fr. Vitus Duschinsky, OFM, pastor of St. Paschal's Catholic church in West Monroe, La., has air conditioned his small church. The church seats 180, took two 7½-ton units to do the job.

"I cannot say that the air conditioning increased attendance at Mass," stated Father Vitus. "Nor has it increased the amount of the collection. But my parishioners no longer need to fan themselves, and I can celebrate the mass without having to change my habit afterwards." This Franciscan priest has drawn plans for a bigger church to start later this year—with air conditioning.

A Jesuit priest serving the Church of the Immaculate Conception, New Orleans, stated that the downtown church must have air conditioning for the benefit of the hundreds of business people and workers who drop in for mass or for a Visit. "It costs us quite a bit to run the air conditioners every day (the large, cathedral-like church seats about 700) so we install a special collection box at the back of the church each season." Parishioners and visitors are asked to drop coins in the "air conditioning box."

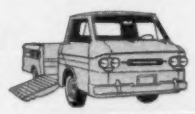
SAVE AS YOU GO WITH CHEVY'S NEW REAR-ENGINE TRUCKS

THERE'S A DOLLAR-SAVING DIFFERENCE IN CORVAIR 95!

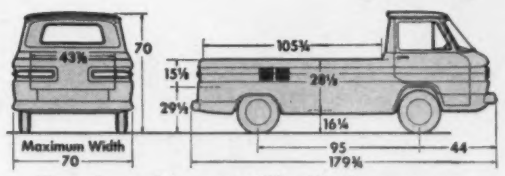
We mean there's a whopping difference—the kind that puts a truck in a class by itself. You can see it, too, especially if you know where to look. In Corvair 95 design details, for instance—the things that tell you a truck is built with care throughout, crafted in a quality way that means more miles before trade-in and less expense along the route. We mean it's the kind of difference that will pay off in dollars every day on your job!

Power team and driver compartment—evidence of extra efficiency. Tucked neatly between the rear wheels is the most practical truck-design idea in years—the Corvair 95 *Unipack power team*. Engine, transmission and rear axle are combined in one compact, *durable* unit. Power is delivered to the rear wheels by the shortest, most efficient route. This unitized power train design (including an engine that measures only 17″ high) takes up less space—allows for plenty of cargo room in the big pickup body. The engine itself is something new in save-as-you-go power: a tough aluminum air-cooled 6 that moves your loads briskly on a minimum of gas. Up front, the big difference in Corvair 95 design is apparent in a cab that gives you bird's-eye visibility (no hood to limit vision), plenty of leg room, and a comfortable full-width foam cushioned seat (standard equipment).

Exclusive side loading ramp—Rampside models. Wide, ruggedly built side gate drops down to form convenient ramp for easy no-lift loading.



Engine access door speeds up servicing—gives fast access to oil filler, distributor, coil, generator and oil filter.



Dimensions point up new utility. Note long cargo area, short wheelbase, low 29½-inch rear loading height.

Corvair 95's stay-together build goes unchallenged in this field.

Super-rigid frame-floor assembly outperforms combination of separate frame and body floor. Eliminates a major part of a separate frame's weight.

Heavy-gauge crossmembers strengthen the underbody; form rigid foundation for front and rear suspensions—another reason for long truck life.

Friction-free coil springs at all four wheels assure top load-carrying capacity and *smooth* ride.

Precision Ball-Gear steering cuts friction (and wear) to a minimum; gives safe, easy steering.

Unitized body construction means maximum strength with minimum weight—for bigger cargoes.

There are literally scores of reasons why no other truck of this type can do so much to put you dollars ahead. There's a cargo area that's almost 9 feet long . . . with balanced weight distribution that enables a Rampside or Loadside pickup to carry up to 1,900 lbs. of payload with a 4,600-lb. GVW. There's a short 95-inch wheelbase for nimble maneuvering; deep-biting traction with engine weight in the rear; handsome styling that's good for business.

That's Corvair 95's special brand of *efficiency*, ready to give you bigger profit hauling in the years ahead. See for yourself at your Chevrolet dealer's. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

1961 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

WDBJ-TV Cooling Protects Equipment, Comforts Employes

LYNCHBURG, Va.—One of the most modern and up-to-date television stations in the country opens its new, air conditioned quarters this spring, it was reported recently.

The new Station WDBJ-TV here, houses some of the latest video electronic equipment available to the television industry.

The air conditioning system in the new structure, which replaces the old building, is one of several features providing pleasant working conditions.

The system, consisting of Trane "Climate Changers," is an elaborate setup which will provide the entire 43,000 sq ft of the building with heat in the winter and cool air in the summer. It will protect the electronic equipment and also enable the employes to work in comfort the year-round.

The chill water necessary for the system's operation is provided by 18 motor-driven centrifugal pumps. The pumps, manufactured by The Deming Co., were supplied through Graves-Humphreys Hardware, Roanoke, Va. Ten are located in the basement while the remaining eight are installed on the second floor.

Weddle Plumbing & Heating Co. is the mechanical contractor who installed the Deming pumps. The architectural firm of Thompson & Payne designed the building.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Outside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

(Continued from Page 1)

have self-sufficient natural resources.

So it depends on manufacturing and trading for its very existence. Most of the raw materials it fabricates come from North America.

Intensely industrious are the Japanese, and smart, too. They place highest values on education and intellect. Example:

Wealthy families adopt bright boys from less well-endowed environs, so as to maintain their dominant positions generation after generation. Marriages for their daughters often are "arranged" to highest ranking scholars, regardless of the latter's original social caste.

Possibly because their landscape is so ruggedly mountainous, Japanese are anything but levelled sociologically. Social extremes of "position" are the rule, and precipitous heights and depths of caste comprise the roles of individual families.

Agriculturally, Japan also is handicapped by its mountains. Few are the valleys and plains which can support cultivation of vegetables and fruits. Meticulous mountain terracing produces the staple rice diet, but gives short shrift to animal husbandry.

Fishing? Ah! That's a different story. Nipponese are the world's most indefatigable fishermen, fish farmers, oyster and pearl cultivators. And, as befits a seafaring island empire, they are shipbuilders, too.

It's a good bet that ingredients of the crab or shrimp cocktail you enjoy at dinner, or the tuna fish sandwich you endure at a drugstore lunch counter, came from Japan.

They Don't Overbreed

After China, India, Russia, and the U.S.A., Japan has the largest population in the world —subsisting on the smallest acreage. This population presently is kept under control, however, by legalized abortions and contraceptive clinics.

It's the only nation on earth brave enough to insure its survival by recognizing that overbreeding results in famine, poverty, and wars. It's also the only nation on earth which has renounced war itself as an instrument of national policy.

By our calendar, Japan is an ancient nation. Its civilization flourished centuries before Columbus found something he wasn't looking for—the Americas—and which he didn't realize he had discovered.

Possibly the lengthy extent of its history is a major reason why its manners are so stylized.

The Japanese language is as complicated as is its polyglot ancestry. Nipponese writing consists of bewildering pictographs put down top to bottom, right to left.

It's a wonder they've done so well commercially while saddled with this communications handicap.

There are thousands of Christians in Japan, but they're immensely outnumbered by millions of Shintoists and Buddhists. You've heard of Zen-Buddism, which is admired by American beatnicks? It's a Japanese patent. And, incidentally, it's a fraud.

Shintoism, near as we can figure it out, is ancester worship, plus loyalty to bosses, and contemplation. Unlike "Zen," it's authentic and logical.

Governmentally, present-day Japan is modelled after the U.S.A., with a bicameral legislative body, like our House and Senate. And they have a two-party system. Their courts resemble ours, too.

For better or worse, Gen. Douglas MacArthur rearranged Japan's government in "our" image constitutionally. Democracy is foreign to their traditions, but they're striving mightily to adjust.

Emigration is a fact-of-life here. Too crowded at home, Japanese for decades have been populating Hawaii, Brazil, Bolivia, Paraguay, Dominica, Peru, Mexico, and most of the trans-Pacific islands with mercilessly industrious laborers.

Commercially and Industrially Unique

As a manufacturing exporter, Japan does well with regard to handicrafts, textiles, chemicals, small cameras, radios, plywood, cement, glass, pottery, ceramics, toys, optics, and jewelry.

But it doesn't compete internationally in the field of heavy machinery—such as commercial or industrial air conditioning.

Commercially, Japan has to be seen to be believed. It's a street-peddler economy still, despite its blindingly neon-lighted shops on the Ginza. (Tokyo, which has become the world's most populous city, also is the most garishly night-lit).

From street stalls you can buy anything from refrigerators to suki-yaki, from indigenous kimonos to imported French perfume. Chain stores are there; also department stores, but they don't awe the peddlers.

Japanese income taxation is murder . . . if you're honest.

The Organization Man

Almost equivalent to the Japanese ardor for education is their devotion to good health. Clinics, hospitals, doctors, and dentists are encouraged by government and industry alike. Thousands of Japanese medicos are educated in the U.S.A.

Even so, Japan is plagued by TB, smallpox, cholera, typhoid, typhus, and syphilis. Especially the latter. Sexual expression competes with baseball here; and male prowess is a status symbol in both sports.

Organization is a way-of-life for the Nipponese. In this predilection they resemble American suburbanites. PTA's, Little League baseball clubs, Boy and Girl Scouts — these they've copied from us with a will and a sway.

Also they've organized Chambers of Commerce, Trade Unions, Employers' Councils, Rotary, Lions, Kiwanis, Masons, Knights of Columbus, YMCA's, YWCA's . . . you name it, they've organized it.

Our "little brothers" in Japan obviously are our greatest emulators in this Era of the De-

Another FIRST from BOHN

Aluminum casings with white enamel finish

FEATURING economical forced air refrigeration coils of very low face velocity

Bohn Lo-Aire Unit Coolers provide positive, low air movement resulting in even temperatures throughout the refrigerated space, while maintaining a high humidity. The Model LO is recommended for fresh product storage above 34° F. There are seven sizes rated from 4,000 to 26,600 BTU/HR at 10° T.D.... economical to buy and economical to install!

BOHN-EL AUTOMATIC DEFROST SYSTEM

For storage temperatures from 28° F. to 34° F., all seven sizes of the Lo-Aire are available with the Bohn-El automatic electric defrost system (Model LOD). This system eliminates wide fluctuations in box temperatures normally associated with air defrost systems and reduces original equipment costs by permitting the sizing of condensing and evaporating equipment on longer running time.

For further information, write for Bulletin 260 or call your BOHN wholesaler.

Buy the known line... the BOHN line... the FIRST line

BOHN ALUMINUM & BRASS CORPORATION

Danville Division • Danville, Illinois

pressed American, and they're growing chestier by the minute.

Try and Find Them

American businessmen who reside in Japan fret most about the housing shortage. An unheated house they wouldn't live in back home rents at $200 to $400 per month—IF they can find one.

Domestic servants are disappearing, too. In this, the world's largest city now, unemployment is less than one per cent.

American production managers complain that it takes a lot more men to do a given job than is necessary. Time and motion studies aren't just resisted; they're ignored, on the whole.

Japan's cheap labor is highly effective on small, lightweight commodities. Witness: cameras, transistor radios, and textiles.

But when it comes to heavy machinery, that cheap labor advantage diminishes because it may take 120 man-hours to turn out an item that could be produced by 15 man-hours in the U.S.A.

You'll notice that Japanese manufacturers aren't making any splash in the automotive business. And they're neophytes in refrigeration and air conditioning, too. Not in the foreseeable future can they be competitive with our industry in world markets.

Although a lot of commercial building activity is proceeding, results come slowly for seekers of homes. Moreover:

Even though the man you want to see has found a home and office space, it won't be easy to find him. Cab drivers rarely understand English, and usually don't know where they're going anyway.

Streets aren't named; houses aren't numbered; and Tokyo sprawls all over hellangone. Moreover, outside the garish Ginza district (where the neon signs are the most) street lighting is totally inadequate.

Close Your Eyes and Open Your Mouth

The picturesque Japan you've heard about—the travel poster Japan—isn't here in Tokyo. It's out in the villages and countryside.

Nearly everybody is familiar with the fact that a Japanese dinner is served on a very low table, in front of which you sit cross-legged and swing low, sweet chariot.

Much of it is cold and raw . . . octopus tentacles, shark fins, seaweed, stuff that looks like cheese and jello but isn't, stalks and sprouts, fish eyeballs. . . .

You can't complain about the service, however. It's instantaneous, accompanied by much bowing and scraping. In fact, you've never seen such bowing anywhere.

In America a chambermaid rarely is seen. In a Japanese inn she expects to undress you, scrub your back, tuck you in between the quilts which serve both as mattress and covering, all the while bowing and saying "dozo" (please).

Japanese claim that their royal family goes back in an unbroken line for more than 2,000 years. In all that time they've been perfecting their manners.

Most 'way out example is their habit of laughing at anything which might be painful or embarrassing. Point of this oddity is that a Nipponese doesn't want anybody else to be pained or embarrassed just because he is.

Ultra-polite though they may be, all bets are off when it comes to boarding a train or bus. Even skilled New York subway pushers would be outclassed here.

The pecking order checks out somewhat as follows: Olympic athletes, judo wrestlers, karate fighters; working girls, working men; old ladies with umbrellas and sharp elbows; pregnant women and young wives with small children; grandfathers and cripples.

Many of the latter still are waiting for a chance to board a commuter bus.

Cleaning System with Refrigerant-11 Solvent

MORE THAN 100 RSES MEMBERS and guests attended the recent joint meeting of the Altoona, Pa., Horseshoe Curve, and Johnstown, Pa., chapters to hear a presentation on cleaning refrigeration systems with "Freon-11" solvent. Speaker was John Landt, technical representative for Du Pont's "Freon" Products Div., who used color slide films and a portable flushing unit to illustrate his talk. Part of the program was also devoted to a discussion of new test instruments and high vacuum pumps for the refrigeration and air conditioning industry. Chairman of the meeting was Charles Makdad of the Allen Supply Co., Altoona.

MANUFACTURERS' REPRESENTATIVES

Growth company has territories open for aggressive agents to handle popular commercial mid-tonnage range of split air-cooled air conditioning systems and heat pumps. Contact the Commercial Products Division,

ADDISON PRODUCTS COMPANY
Addison, Michigan

Get your copy

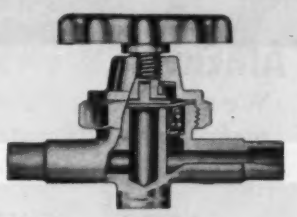
Operating Costs of Residential Air Conditioning and What This Means to Dealers and Installers. By R. A. Gonzalez—25¢ each.

Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

HENRY VALVE CO.
CONTROLLING FLOW
SINCE 1914

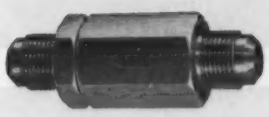
Every product bearing the name Henry carries with it complete assurance of on-the-job satisfaction. This quality of performance and the confidence it inspires have made Henry the most accepted line in the industry. For Commercial Refrigeration and Air Conditioning Systems Using Refrigerants 12, 22 and Ammonia.

VALVES—Shut-off
Packless, Packed and Wing Cap Types
Integral and Flanged Connections

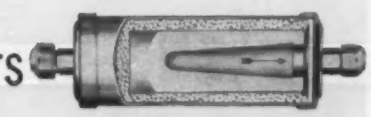


VALVES—Pressure Relief
Piston and Diaphragm Types for Atmospheric and Vent Line Applications

VALVES—Flow Check
Spring Loaded and Free Floating Types—also for water and air



FILTER-DRIERS & Driers
DRI-COR Sealed and Cartridge Types with Molded Core and Granular Desiccants



STRAINERS—All Types
Sealed and Cleanable—Applicable for water, oil and air

Also: Tube Piercing, Line Tapping, Line Port and Can Tap Valves
Strain-O-Kaps and Terminal Seals for Hermetic Compressors

HENRY VALVE COMPANY
For Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

You Asked About It

Edited by Hugh T. Mahar

Q. Where can I secure a Burroughs 33-73A belt tension gauge like the one you mentioned in the April 17 issue of the NEWS?

RCM—Tennessee

A. We suggest you write to: Wm. Winkleman, General Mgr., Johnnie & Mack Auto Service, 74 N. E. 20th St., Miami, Florida.

Q. Can you tell me where I can get a good up-to-date service manual dealing with all makes generally? As a newcomer to the field, I would find this most helpful.

HWA—FLORIDA

A. Refrigeration Service Engineers Society currently publishes the best book of this type. Because of the nature of the industry, manufacturers have not agreed on publication of all-makes manuals with wiring diagrams.

The address of RSES is given below:

433 N. Waller Ave.,
Chicago 44. Ill.

Q. Where can I obtain U. S. Standard Specifications for testing domestic and commercial refrigerators and air conditioning units?

FR—Columbia

A. The Air-Conditioning & Refrigeration Institute, 1346 Connecticut Ave., Washington 6, D. C., will probably be able to send you the information you seek.

'Simplified Practice' Reduces Parts Problem

Aids All from Producer to Consumer

In line with the thinking outlined in our editorial of May 8, "A Step In the Right Direction," many readers may be interested in learning of a method for minimizing the problems caused by the multiplication of similar or identical replacement parts.

This method is known as "Simplified Practice" and is the result of concerted action of manufacturers, distributors, and users of specific commodities, in cooperation with the Commodity Standards Div., Office of Technical Services, U.S. Dept. of Commerce.

The purpose of Simplified Practice is to avoid waste and confusion by establishing standards of practice for sizes, dimensions, and varieties of specific products, as well as to establish simplified methods of performing specific tasks and to simplify packaging processes.

ANYONE MAY MAKE RECOMMENDATIONS

Specifically, anyone—manufacturer, distributor, or user—may make certain recommendations for eliminating parts which they feel serve no useful purpose. These recommendations are voluntary and are considered by the Commodity Standards Div., after which they are referred to other elements within the industry concerned.

Recommendations along this line which meet with general industry approval are printed and made available through the Government Printing Office at nominal cost. These listings are periodically reviewed and revised whenever changing conditions warrant such revision.

An example of a Simplified Practice Recommendation is one covering Pipes, Ducts, and Fittings for Warm-Air Heating and Air Conditioning Systems adopted Feb. 15, 1960. This informative pamphlet contains not only a listing of such pipes, ducts, and fittings but also a thorough explanation of Simplified Practice and forms which may be used if you wish to support this particular recommendation.

This pamphlet explains some of the specific benefits which follow the adoption of Simplified Practice:

To The Producer and Manufacturer

Less capital tied up in slow-moving stock.

More economical manufacture due to less idle equipment, ability to make longer runs with fewer changes, less stock to handle.

More permanent rather than seasonal employment.

Larger units of production, less special machinery.

More prompt delivery, less chance of error in shipment.

Less obsolete material and machinery.

To the Jobber, Wholesaler, and Retailer

Increased turn-over and elimination of slow-moving stock.

Greater sales concentration on fewer items.

Decreased capital invested in stock and repair parts on hand.

Less storage space required.

Decreased overhead and handling charges.

To the Consumer

Better values than otherwise possible.

Better service in delivery and repairs.

Better quality of product.

A copy of this pamphlet may be obtained by writing the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., and enclosing 15 cents in stamps or coin.

NOW
DISTRIBUTORS WANTED

For the Greatest Profit Producing Line in Air Conditioning History

SO NOW . . . for the first time the makers of . . .

KOOL*A*BOUT

Are Inviting Distributors and Dealers For

"AMERICA'S FASTEST SELLING PORTABLE ROOM CONDITIONER"

We are looking for aggressive, experienced, high caliber companies who are interested in *making money* for themselves.
Exclusive key territories are now open. If you are interested, ACT NOW!

. . . LOOK - - CHECK THESE BIG - - -
EXCLUSIVE - - - SELLING FEATURES:

- √ The KOOL-A-BOUT portable room conditioner requires no window installation . . .
- √ It Refrigerates . . . Dehumidifies . . . Circulates and freshens the air . . .
- √ IT IS MOUNTED ON EASY GLIDING WHEELS AND CAN BE MOVED FROM ROOM TO ROOM VERY EASILY . . .
- √ It is simple to operate . . . Easy to maintain . . . Blocks no light or view . . .
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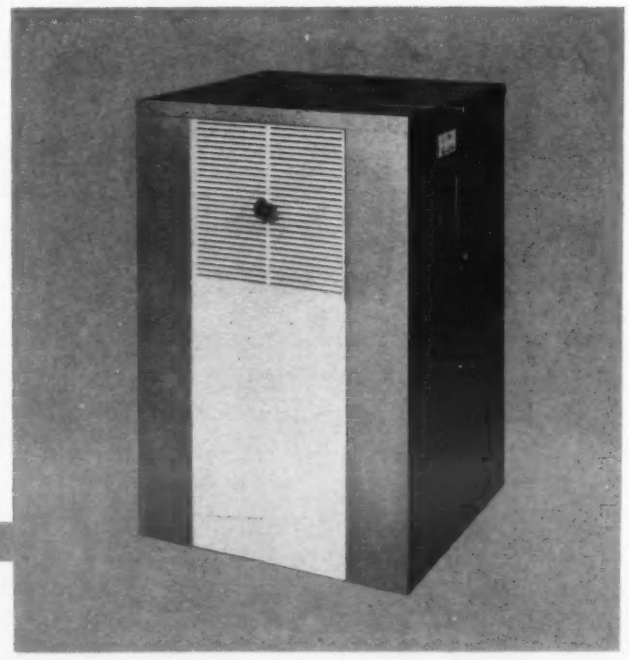
- √ Plug it in to any standard outlet . . .
- √ Draws only 91/2 amps . . .



NOW YOU CAN PLEASE ALL THE PEOPLE ALL THE TIME . . .

The KOOL-A-BOUT portable room conditioner will be heavily supported by a coordinated, action-packed advertising and merchandising campaign which will hit thousands of customers with irresistible impact and will ZOOM your sales and profits. You have many profitable reasons to tie in with KOOL-A-BOUT portable room conditioner.

Can we pursue this program at greater length?

For further information and appointment, please write, or call:

Whitehall ENGINEERING COMPANY
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539 E. Illinois Street • Chicago, Illinois • Phone: 467-5666

Management Booklet Gives Case Histories

NEW YORK CITY — Dun & Bradstreet has announced the availability of a booklet entitled "Profitable Management for Main Street."

It deals with a variety of business problems through selected case histories. Single copies are available by writing to Dun & Bradstreet, Inc., Public Relations Div., P. O. Box 803, Church St. Station, New York 8, N. Y.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

Sales Presentations (1)

Differ for Architects, Consultants, Contractors

John O. Roth, marketing manager for Dunham-Bush, West Hartford, Conn., frequently writes sales training lessons for distribution within the company. Some of Roth's material is of such general interest that the NEWS publishes pertinent portions here. Especially of interest is the slanting of sales presentations toward consulting engineers, architects, and contractors.

Your sales approach can help or hinder you where your potential customers are concerned. For bear in mind that no matter how excellent the product you are selling, or hope to sell, your presentation will have a highly important bearing upon the consumation of such a sale.

Keep in mind that your prospective customers, the consulting engineer, the contractor, the architect, and the consumer, each differ in their fundamental interests. Your approach to each will vary, depending upon these differing interests. But before carefully considering these differences which exist, let us discuss briefly the fundamentals of the sales approach which are applicable in each and every instance.

Perhaps one of the most important items to bear in mind when preparing your sales presentation is the fact that your customer is interested in quality first, price secondly. While contractor, engineer, architect, or product user is deeply concerned with the cost factor, he is even more interested in whether or not the product excells in performance and durability character.

In consequence, it will behoove you to accent quality and to emphasize the many ways your company endeavors to make its product the finest of its species. The reputation your company enjoys, its standing in the field, as well as the character of its engineers, supervisors, and workers, all are of vital interest to your prospect regardless of his category.

Next to quality, your prospect is interested in the servicing of the product you have sold him. The consumer and his representatives, the engineer, contractor, or architect, require reassurance that when a product requires service attention, it will be forthcoming. Punctually, willingly, even cheerfully rendered.

If your company maintains service representatives from coast to coast, if it boasts reservoirs of replacement parts warehoused in strategic areas, these are points you will wish to bring to the prospects' attention, and deservedly so. If you guarantee your product, expound upon this guarantee being careful not to enlarge upon its ramifications. Your product purchaser will expect you and your company to live up to any and all promises having to do with the service they may reasonably expect.

Now that you have considered carefully the quality and service aspects you will wish to turn your sales presentation attention to the question of price. That your price status in relation to that of your competitors is important, no one can deny.

It is your responsibility to know, not guess, exactly how your product compares with competitive products with relation to price. But it is also important, even imperative, that you do not underestimate the intelligence of your potential purchaser. In all probability he has already checked and knows as much or more than you do with respect to what he can obtain competitive products for.

If you possess a price advantage, all well and good. But make very certain indeed that feature for feature, condition for condition, this price advantage is clear-cut. Otherwise you may be reminded of any discrepencies by your potential customer. In any event he will be thinking about such matters to a considerable extent.

Above all, do not dwell to a considerable extent upon any supposedly existing price advantages involved lest your customer-to-be comes to the conclusion that the only reason you are "talking price" is because you have far too little else to discuss.

So much for the generalized aspects of your sales presentation. Now let us consider each prospect in terms of the approach which will interest him to the greatest degree. Let us examine the needs of the consulting engineer first of all.

(To Be Continued)

Warren Webster Names John J. Poyatt

CAMDEN, N. J. — The appointment of John J. Poyatt as manager of wholesale distribution for Warren Webster & Co., Inc., has been announced by Andrew F. Ward, marketing vice president.

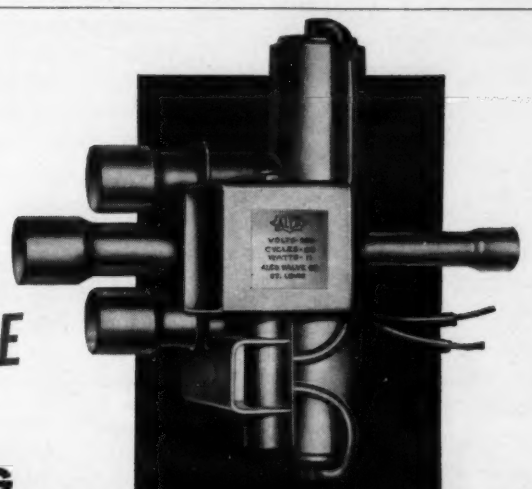
J. J. Poyatt

Poyatt has been associated with the Webster organization for the past five years, spearheading a program of wholesaler development. The promotion to his present position emphasizes company policy regarding those Webster products which lend themselves particularly to distribution through wholesaler channels, it was stated.

Ward said that during the past year Webster "has added materially to its line of 'engineered' products — our new school unit ventilator is a specific application. Wholesaler distribution of certain products will enable our representatives to devote more time to these 'engineered' products."

Looking for a Business to Buy . . . ?
Check the Business Opportunities Section in the classified advertising columns.

Made by ALCO
OF CAST IRON AND STEEL
like a Compressor
for LONG RELIABLE LIFE



4-WAY REVERSING VALVES
for all reverse cycle systems

=4WB4-57 Capacities:
2 to 3 tons—Refrigerant 12
3 to 5 tons—Refrigerant 22

=4WB6-79 Capacities:
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Features:

- fine machining and precision honing of cast iron slide and steel outer shell—NO PLASTICS ARE USED.
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- shifting (change cycle) while the system is in operation with a 300 PSI differential.
- rapid shifting—to shorten change-over time and therefore shorten defrost cycle.
- the shifting of the valve independent of any pressure drops, and efficient shifting under any combination of operating conditions.
- mounting in any position—except with the pilot valve upside down.

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write for Specifications.

• BUY SECURITY
• BUY QUALITY
• BUY ALCO

ALCO VALVE CO.
353 KINGSLAND AVE. • ST. LOUIS 5, MO.

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The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors
Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

Editorial

How Nations Acquire Capital: A Primer for the 'Underprivileged'

NOWADAYS every "underprivileged" nation wants to get ahead of itself in a goshawful hurry.

All of a sudden its admittedly needy citizens clamor for two chickens in every pot, two cars in every garage, refrigerators, TV sets, and inside plumbing — all at the same time and tomorrow morning.

Simultaneously their Heads-of-State petition for steel mills, glamorously uniformed armies, irrigation dams, and capital investments on a grandiose scale (whether or not they are needed or can be utilized economically).

Honestly, quick capital acquisition and overnight achievement of American living standards are mutually incompatible aims—if backward nations expect them to occur concurrently.

Donations of foodstuffs and consumer goods to hungry areas are temporary palliatives. Worthy, yes. But they don't solve the permanent problem of shifting primitive farming methods toward scientific agriculture, or leap-frogging from spinning wheels to automated textile factories.

Moreover, when the subsidized are satisfied, too often they take charity for granted, and consider loafing as their birthright.

Gift "capital" doesn't work well, either, long-range. Mostly it's dissipated and misappropriated by beribboned ruling factotums. Seldom does it result in substantive local enterprises which are self-regenerating.

There are only the three sources of genuinely useful capital available to any "emerging" nation:

(1) Loans or donations from other governments, (2) branch factories and the like imbued by foreign corporations, and (3) internal investment by local entrepreneurs who plow back their savings into productive enterprises at home.

Historically, the latter method has been the most useful and important and lasting. Yet, in slightly industrialized as well as primitive countries, this fact largely is ignored nowadays.

Capital contributed from abroad obviously can't be more useful, more wealth-producing, or more valuable than capital generated internally. It's easy money and, as such, easily squandered.

There's little, if any, *feeling of proprietorship or responsibility* toward this type of money. "There's more where that came from" is the usual attitude of recipients.

Without exception, bureaucracies of underdeveloped countries are inefficient, and frequently they are corrupt. That's why so much of our Foreign Aid billions have been detoured into hidden bank accounts in Switzerland.

Rarely do our freeloading gifts filter down to The People of a receiving nation. Rather, their arrival seems to trigger revolutions of the Needy against the Greedy (whom unwittingly we have enriched).

Our generosity thereupon becomes a *substitute* for internal effort and initiative. So, after a few local politicos get rich and run away to the Riviera, their poor country is no better off than before.

Probably some "underdeveloped" countries never ever can become industrial powers. They just don't have the physical or human resources to cut the mustard.

However, almost all backward nations could raise their standard of living somewhat, and a few might become comparatively wealthy and powerful eventually. Those who have the will to do so must choose between two routes toward these ambitious goals:

(1) *Communism.* By crushing individual freedom, self respect, and initiative, capital can be accumulated by self-appointed overseers of slave labor. Millions of citizens will starve, or be murdered, in the process. To acquire national capital that horrible way, "the unwashed" are transformed into unfeeling, grimly hopeless ants.

(2) *Free Enterprise.* Through honest output, competitive wage-scales, utilization of brainpower, cultivation of goodwill among customers, and as much *private* investment as a cooperative country can attract from abroad, almost any ambitious "emerging" nation can generate its own capital.

Witness: the U.S., Canada, West Germany, the EEC combine, Japan, Australia.

"Social justice" (i.e., living as well as Americans do) cannot precede laborious economic development and patient capital investment. For instance:

The Congo jungle obviously can't afford welfare state programs until it becomes self-sufficient industrially and commercially. Before a nation can spend highly, or invest soundly, its own taxable citizens must earn substantial incomes through their own efforts.

Burden of national economic development, thus, squarely is on the shoulders of any geographical entity. A restless population must have the WILL to work, an URGE to forego temporary self-indulgement and to be PATIENT—if it is to achieve independent stature in the Community of Free Nations.

Failure to recognize that simple truth—on the part of recipients of our largesse—may be the chief reason why our foreign aid programs haven't produced the results predicted so blithely by their progenitors.

"The Lord helps them who help themselves." Q. E. D.

OPINION IS LIKE A PENDULUM and obeys the same law. If it goes past the center of gravity on one side, it must go a like distance on the other; and it is only after a certain time that it finds the true point at which it can remain at rest.—*Schopenhauer*

On Dale Carnegie

'SHOCKING'

Rigidbilt, Inc.
Franklin Park, Ill.

Editor:

Your shocking May 1st editorial, "Are We Overdoing Dale Carnegie," has given your wide circle of readers an entirely erroneous image of Dale Carnegie and his works. . . . Your readers . . . are led to believe that we should have more argument, destructive criticism, verbal fisticuffs, and the usual "freedom of speech" with little regard for accuracy or responsibility.

Contrary to your expressed and implied opinions, Carnegie graduates don't walk around like grinning jackals, yessing everyone and crossing no one. . . . Neither you nor I could recognize the Carnegie graduates in a group because they exhibit no trademarks and display no emblems.

In my opinion, we would all do well to devote more time to the study of both the Bible and Dale Carnegie's books.

H. F. KRANTZ,
Chief Engineer

'MAGNIFICENT'

123 Creatwood Trail
Smyrna, Ga.

Editor:

"Are We Overdoing Dale Carnegie?" A truly magnificent piece, and anyone in our industry who thinks that the answer is anything but an unqualified "Yes" is sadly unaware of much that is going on.

It has been my pleasure to be associated with our industry for 30 years in many capacities from serviceman-apprentice to corporation executive vice president. During this time, I have seen practices grow that have hurt us because the *soft glove — I-don't-want-to-hurt-your-feeling* sort of procedure has been followed. In most instances, an honest, straightforward, constructive, and intelligent response would have been by far the better way to have handled the situation.

I am of the opinion that our present selling practices, some of them deplorable and totally without morals; the constant warranty wrangles; the double-talk, pass-it-to-George sort of thing are the inevitable results of an unwillingness to settle any issue properly the first time it comes up for discussion.

A positive attitude today is a short cut to the line of unemployed, as management is trying to sleep in the bed it made for itself over the years because we felt the need to—as you so forcibly put it—"prostitute our moral integrity."

R. E. KLINGLER

REPRINTS

Continuing reader reaction to our comments on Dale Carnegie has made it necessary for us to reprint the editorial. Minimum order, 10 copies for 50 cents. Remittance with order, please.

IS PURSUIT OF HEALTH WASTEFUL?

Compton Advertising, Inc.
New York 22, N. Y.

Editor:

I was very much interested in reading your "Inside Dope" column. Also your editorial "Is the Pursuit of Happiness and Health In America 'Conspicuous Waste'?" in your April 17th edition of AIR CONDITIONING, HEATING & REFRIGERATION NEWS.

You have expressed a point of view which is practically identical with one which many of us in the advertising field have and have held for a long time.

I am taking the liberty of sending to you a talk which I made on this same subject to the Rotary Club of Paterson, New Jersey. I think you might be interested in seeing how closely these two points of view coincide.

JOHN B. BOYD

MORE LETTERS ON PAGE 34

AIR CONDITIONING HEATING & REFRIGERATION NEWS
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Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: $6.00 per year; 2 years, $9.00; 3 years, $12.00. All other countries: $10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

From the Files of the News

25 years ago . . .

"Air conditioning and air conditioned are misused words often the basis of voluntary or involuntary misrepresentation," ACMA members heard last week from a speaker who cited the following definition from the Better Business Bureau as "good": "the scientific preparation and simultaneous control of the atmosphere within a structure and that Summer Air Conditioning means **at least** the cooling, dehumidifying, and circulating of air; Winter Air Conditioning means at least the heating, humidifying and circulating of air." . . . To demonstrate the feasibility of air conditioning for low cost homes Kelvinator Corp., in cooperation with utilities and builders all over the country, is organizing construction of 100 $6,000 "Kelvin Homes" with a "standard chassis" and a "package air conditioning" system, built along the same lines as 11 residences in Detroit. A ½-ton condensing unit was used in the cooling package.

An operator of an air conditioned building recently complained that his doctor tenants objected to air conditioning because it cured hay fever patients while they were waiting for treament. . . . The American Tobacco Co. reported a gain in net profit of $23,372 from its air conditioning installation in one year as a result of the improved health and efficiency of its employes.

More restaurants are being air conditioned than other types of establishments in Detroit, and it's probably because among the small concerns now able to afford air conditioning, restaurants show the most immediate profit from it, a Carrier distributor in the area reports. . . . Installation of York small, individual refrigeration systems in the new quarters for famed Lundy's Restaurant in Sheepshead Bay, N. Y., was marked by ingenious use of under-staircase mountings and on-top-of-food-storage coolers.

10 years ago . . .

Recently released text of the Federal General Ceiling Price Regulation shows that charges for most service operations have been removed from the provisions of the regulation. . . . A Carrier Corp. survey showing an expanding market for air conditioning in hotels of all sizes had a special note of interest in a projected plan for the use of specially designed openings through the wall in the Sandpiper hotel in Clearwater, Fla. in which individual room units would be placed.

"Other things being equal, our special proposal form often means the difference between getting and important contract or losing out with our bid," states a Detroit contractor. . . . Speaking to a group of service engineers, John Bopp of Ansul Chemical Co. said that experience accumulated from service engineers taking advantage of Ansul's offer of free advice on problems caused by chemical action revealed that the three most troublesome questions involving foreign matter in a system are: (1) Where does it come from? (2) How can I get rid of it? (3) How can I stay rid of it?

"The housewife has come to regard the self-service meat case as a suggestion box. She welcomes new ideas, and she is attracted by items that look different," a Kansas market operator told the Supermarket Institute's annual convention. . . . Methods for drying refrigeration systems after the hermetic compressor had been replaced, including the use of methyl alcohol drying agents, was described in an instalment of the series "Servicing Hermetics In the Field."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

WANTED

CANADIAN MANUFACTURERS' REPRESENTATIVE, familiar with and currently handling refrigeration components, wanted to represent well known manufacturer of driers, strainers, accumulators, etc. Send particulars to

BOX A6788, Air Conditioning, Heating & Refrigeration News.

New House or Modernization

NBH-CC Develops Hydronics Sales Plan As Guide for Wholesalers

NEW YORK CITY—A sales plan for wholesalers who want to increase their hydronic sales in the new house or moderization markets has been developed and published in the form of a manual by the National Better Heating-Cooling Council.

The 24-page manual, titled "Wholesaler's Hydronic Sales Plan," is "a comprehensive step-by-step guide containing all the basic information needed by a wholesaler to organize and carry out a complete, aggressive hydronic promotion program," the BHC said.

"The sales plan was developed by a BHC committee of prominent wholesalers and manufacturers, and field tested before publication in manual form.

"The plan is based on the findings of a national survey, prepared and analyzed by BHC's wholesaler-manufacturer committee. Two-thirds of the wholesalers who responded to the survey stated that their hydronic sales had increased over the past three years."

The manual tells the wholesaler how to set up an aggressive hydronic department under the supervision of a hydronic specialist. It points out, too, where to find and how to train the specialist.

"One section of the manual describes a new team approach to home builder sales in which the hydronic specialist works together with his contractor customers and manufacturer suppliers to develop a coordinated sales and promotion attack," it was pointed out.

"There is also a simple market analysis form which helps the wholesaler determine the potential for hydronic business in his area in both the new house or replacement and modernization fields. Additionally, to insure the most competitive installation costs, details about the 'package hydronic job' are provided."

Copies of the manual are available through National BHC members and local councils.

The manual can also be obtained for 75 cents a copy from the National BHC office, 250 Park Ave., New York 17.

McQuay THERMEX®
HOT GAS DEFROST SYSTEM

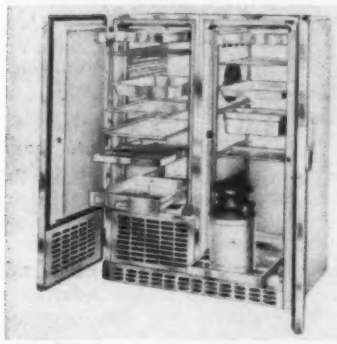
For the best buy and the highest performance, the McQuay Thermex® hot gas defrost system is the system that satisfies every requirement. This system is the simplest, yet the most efficient hot gas defrosting system available at any price. Being fully automatic, the Thermex® hot gas system can be adjusted to meet your personal defrosting requirements. Nine sizes are available with a range of capacities from 3,000 to 32,000 Btu/hr at 10° T.D.

Your McQuay wholesaler can quickly show you the advantages of the Thermex® hot gas defrost system, or write McQuay, Inc., 1607 Broadway N.E., Minneapolis 13, Minnesota.

SAVE UP TO 25%

McQuay INC.
AIR CONDITIONING • HEATING • REFRIGERATION

Can Revamp Refrigerator Without Tools



● A new Victory "Vimco" stainless steel refrigerator, model RS-40-S, featuring interchangeable interiors "that can be easily changed or rearranged in minutes, without tools," has been announced by Victory Metal Mfg. Corp., Dept. AH&RN, Plymouth Meeting, Pa.

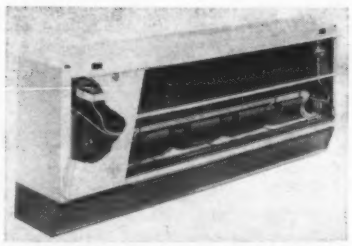
It may be equipped with pull-out or stationary shelves, adjustable-type pan slides, pull-out or stationary meat rails, pull-out pan supports, and ball bearing drawers. "Controlled air flow" and automatic defrosting are other features.

Victory refrigerators are available in 1, 2, 3, and 4 sections.

Offer 136 Models of Cabinet Unit Heater

● A versatile new line of cabinet unit heaters, "especially designed for easy installation and maintenance," has been introduced by Modine Mfg. Co., Dept. AH&RN, 1500 DeKoven Ave., Racine, Wis.

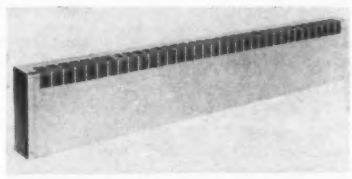
Modine is offering the cabinet unit heaters in 136 different models—17 types in eight sizes each—so the new line is adaptable to unlimited applications in commercial, institutional, and public buildings, it was stated. In addition to free-standing units, there are models for mounting on walls or ceilings and for recessed installations. The units can be combined in any of seven decorator colors.



From the standpoint of maintenance, one of the exclusive features is an optional pushbutton lubrication system that sends metered amounts of lubricant to every oiling point, the company said.

Other design features include a filter that slides out from the front of the unit like a drawer; quick-access control panels that open at the turn of a latch; spacious end compartments; a special "Perma-Lap" framing on recessed models that fits snug with the wall. Air delivery capacities range from 250 to 2,000 cfm.

Convector Has Pipe Hanger, Mullion Channels



● Two new features said to make installation easier, plus a curved outlet cabinet, have been added to the "Wall-Fin" convector line of finned tube radiation manufactured by The Trane Co., Dept. AH&RN, La Crosse, Wis.

The new features include a supply and return pipe hanger which can be mounted to conceal piping at different levels within the cabinet. The new hanger costs less than a ball bearing element hanger for pipe support, Trane said. It will accommodate 1-in. copper, 1¼-in copper, and 1¼-in. IPS pipe.

Also featured are mullion channels which permit easier installation of Wall-Fin on panel or curtain walls. The installer notches the channel to fit the required mullion spacing. Channels are then bolted to the mullions, using two channels for each run of Wall-Fin with enclosures. The channels can be used wherever construction interferes with attachment of Wall-Fin brackets directly to the wall.

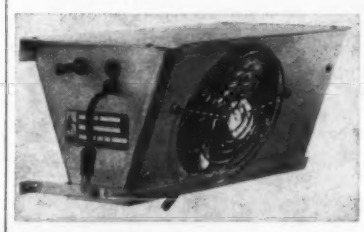
The new curved outlet cabinet brings the Wall-Fin cabinet designs to four, including sloping outlet, front outlet, and top outlet cabinets. Each is provided in 4 and 5¼-in. deep models and three standard cabinet heights.

Attic Fan Uses Two Corner Supports

● A new line of horizontally-installed attic fans, representing a major design change, has been introduced "at prices lower than comparable previous models" by the Home Comfort Products Div., The Lau Blower Co., Dept. AHRN, 2027 Home Ave., Dayton 7, Ohio.

"This new design utilizes two steel corner supports attached to a cross bracing," it was explained. "This holds both the fan blade and motor with belt drive. It replaces the older style 'wrap around' construction."

"The 'Rancher' fans are designed for installation in one or two-story homes with low pitched roofs and limited attic or crawl space. Only 30 in. is required between fan and roof. In the new design, weight has been reduced yet the free air delivery, rated in cfm, remains the same. Clearance between blade and attic floor is increased from 7 to 12 in."



Unit Cooler Designed For Small Boxes

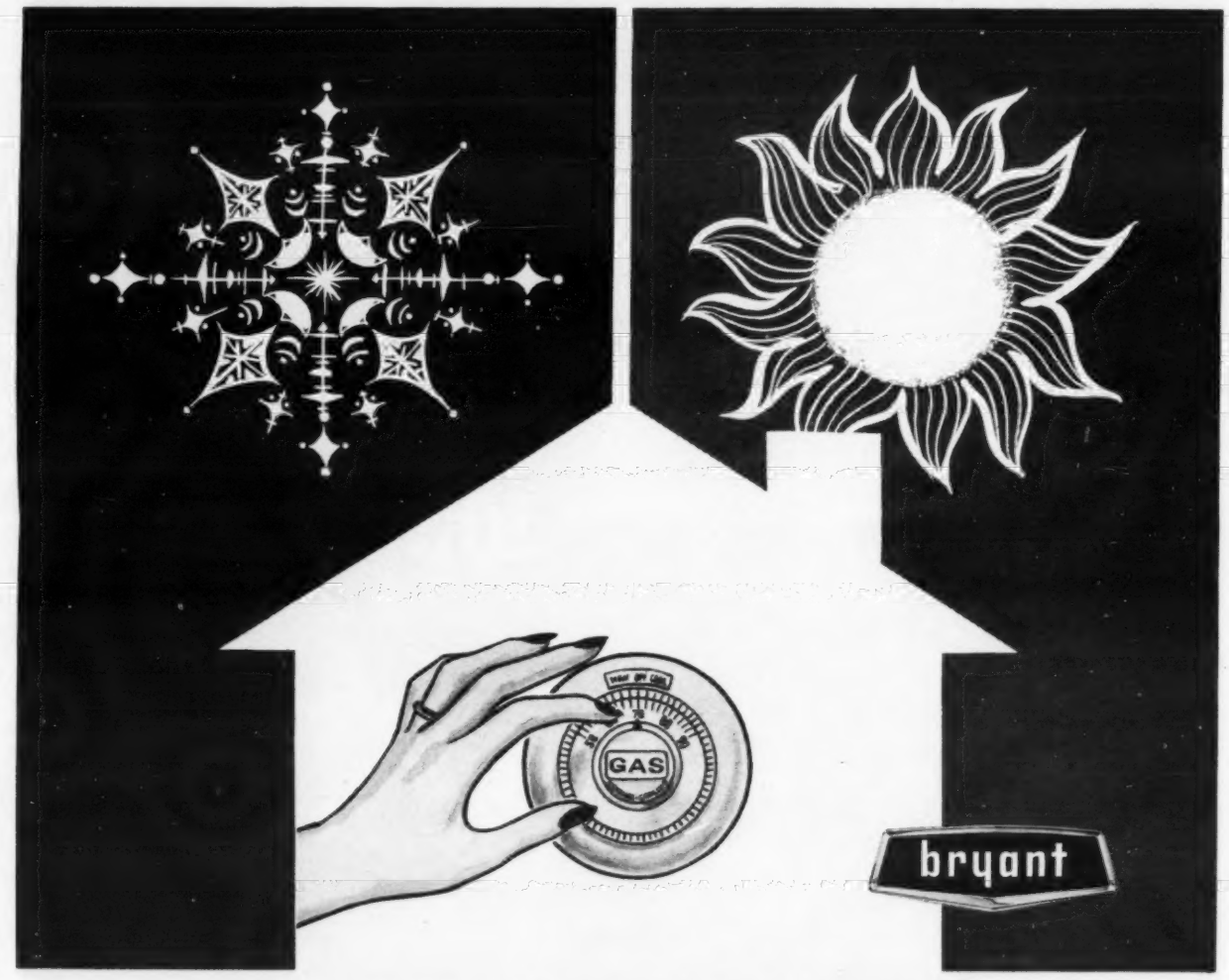
● Compactness is featured in a newly-designed economical, power-packed unit cooler, the "Bohn Vee-Aire," it was announced by the Danville Div. of Bohn Aluminum & Brass Corp., Dept. AH&RN, Danville, Ill.

Air is drawn in over the coil surface and discharged downward and to each side.

Available in two sizes, 650 and 800 Btuh at 10° T.D., the units are designed for use in small reach-ins, backbars, under-counter boxes, and other applications where a small compact unit is required, it was pointed out.

"Only 6¾ in. high they can be mounted easily from the ceiling, from the back wall, or from the end walls. The drain pan is furnished as standard equipment. Thermal expansion valve mounts inside of unit."

The coolers are constructed with aluminum casings.



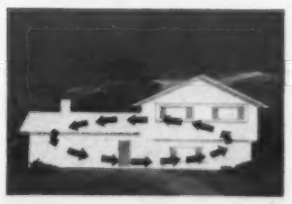
DEPENDABILITY

The most important feature in air conditioning today!

And a Bryant Gas air conditioning system is *truly* dependable.

Because it's Gas, weather will not disrupt service, especially on hot, hot days when it's needed most. Because it's Gas, neither you nor your customers will be bothered with excessive costs, excessive maintenance. For example, a Bryant add-on Gas cooling unit installs outdoors, uses no high amperage wiring, no valuable floor space, no water tower. And, because it's Bryant, you are backed by a company with over 50 years experience in home comfort . . . now a leader in air conditioning.

Bryant Gas air conditioning can be depended upon to furnish *whole* house comfort—all year round. And *nothing* cools more comfortably, more quietly, than Gas. Ask your Gas company for details. AMERICAN GAS ASSOCIATION

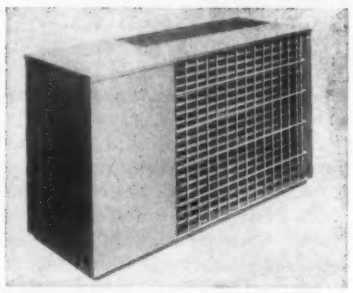


Bryant Gas air conditioning cools with an even flow of air, filtering out pollen and dust. Responds instantly to temperature changes—operates *quietly*.

A flip of one switch gives *coolness* in summer, *warmth* in winter—with compact Bryant Gas furnace (*fits in closet-size space!*) plus Bryant add-on Gas cooling unit.

LIVE MODERN FOR LESS WITH . . . GAS

Narrow Compressor Unit Can Hide Away



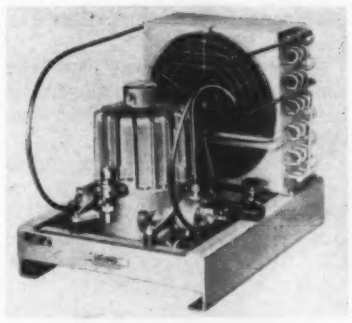
● "Real hideaway dimensions" characterize its new DNR series of air-cooled remote compressors for residential and light-commercial air conditioning, according to Day & Night Mfg. Co., Dept. AH&RN, P.O. Box 2222, La Puente, Calif.

First of the series to be introduced is the model 30 DNR, rated at 30,000 Btu at 95°. It is to be followed shortly by the 5-ton 60,000 Btu model 60 DNR.

"The model 30 DNR," the company stated, "is a scant 16⅞ in. wide, so it can be snug up against the side wall of a structure inconspicuously. It is 25$^{13}/_{32}$ in high and 44½ in. long. The narrow slimline width has been achieved by a side-intake, top-discharge pattern of handling condenser air, it was pointed out.

"The condenser coil is 5.53 sq ft, 3-row design with ½-in. tubes and 13 rippled-surface aluminum fins per inch. It includes liquid refrigerant sub-cooler and liquid sight-glass with moisture indicator. The fan is a 16-in. propeller type, powered by a ⅛-hp, 1,050 rpm motor.

"The model 30 DNR is equipped with a Tecumseh 3,500 rpm compressor occupying a partitioned compartment with all controls. It is factory charged with sufficient R-22 for 25 ft of line."



Two-Stage Hermetic Reaches -125°F.

● Using Refrigerant-13B1, a new two-stage hermetic compressor, air-cooled condensing unit has produced a final temperature in methanol of -87.5°C, claims Hans Goldner & Co., Stuttgart, West Germany.

"The compressor operates with no piston pin and has but three moving parts," the company contends. "Using Frigen-13B1, it runs even quieter than when it operates on Frigen-22.

The new unit makes it unnecessary to use cascade systems in a wide range of applications, the company stated.

For more information, write Hans Goldner & Co., Dept. AHRN, Industriestrasse 52, Stuttgart, Germany.

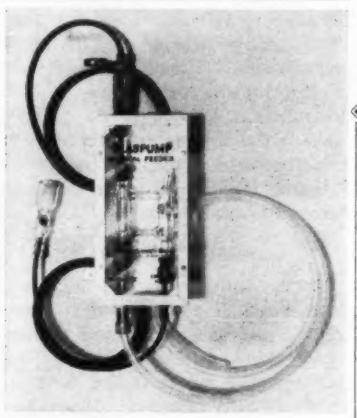
Sheet Metal Shear Is Portable, Electric

● A new, portable, electrically-operated sheet metal shear is now available from the Airserco Mfg. Co., Dept. AH&RN, 435 Melwood Ave., Pittsburgh 13, Pa.

This shear is offered in two types: The complete Airserco-Docken Shear, listed as Airserco No. 8851, and the Airserco-Docken Shear Head only, listed as Airserco No. 8850. The head only can be attached to most makes of industrial, portable, electric drills, the company said.

"This shear operates by cutting a ⅜-in. ribbon of metal from sheet stock or from any existing flat or curved surfaces," it was pointed out.

"The cut can be started from an edge, or from a quarter-inch starting hole located anywhere on the face of the metal. The shear will handle 19-gauge sheet steel or its equivalent in other metals and plastics."

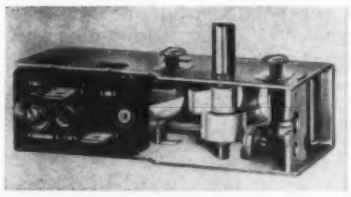


Chemical Feeder Has Unbreakable Stopcock

● A new "Glaspump" chemical feeder developed by California Scientific Glass Co., Dept. AHRN, 9811 E. Rush St., El Monte, Calif., is designed to pump chemical treatment into cooling towers, evaporative condensers, or other unpressurized water systems to control and prevent development of algae and other bacteriological formations.

"The primary feature is its unique, low-friction, unbreakable Teflon stopcock that does not require lubrication and does not move under vibration," the company said.

"Flow control valve permits ¾ gal. per minute at line pressures up to 125 psi. Check valve prevents backflow into chemicals."



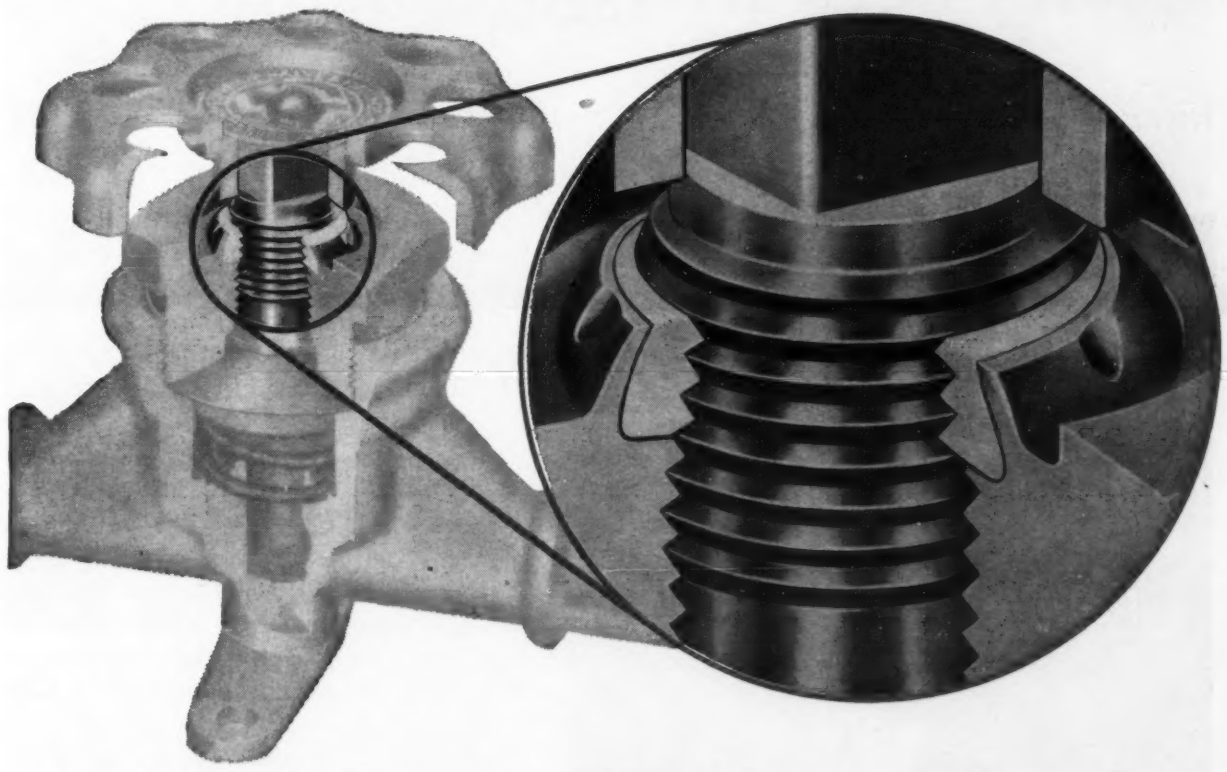
Ranco Humidistats Have Wide Range

● A pair of compact humidistats for control of humidifier and dehumidifier units in air conditioning systems have been introduced by Ranco, Inc., Dept. AH&RN, 601 W. Fifth Ave., Columbus 1, Ohio.

"Called the J10 and J11, these wide range humidistats respond to atmospheric moisture content within a confined area to automatically cycle humidifying or dehumidifying equipment," the company said "Both controls operate efficiently within a 20 to 80% relative humidity range.

"To insure maximum flexibility of installation, the controls vary in the positioning of their dial shafts. The J10 shaft is centered between the mounting holes on the side of the control. In the J11 model, the dial shaft is located at one end of the control, 90° from the mounting surface."

NOW! STOP VALVE FREEZE-UP



WITH THE NEW "SEALZALL" Superior

For the difficult supermarket job try Superior's newly developed "SEALZALL" moisture seal (Patent No. 2,986,372). SEALZALL is now available in the *refrigeration service proven* Tuffy and Globe valves in sizes up to 1⅛". This positive moisture barrier prevents condensation from seeping down between the stem and bonnet and causing valve "freeze-up."

Made of resilient Teflon, the SEALZALL moisture barrier is firmly sealed into the valve bonnet. The SEALZALL does not turn with the opening and closing of the valve, but remains in position and maintains a permanent seal.

When you specify Superior Valves, you're assured of quality . . . in engineering, manufacturing, testing and performance. Simplicity in design, from the hand wheel through diaphragm construction, makes Superior Valves easier to install . . . and *longer lasting* in performance.

See your local *wholesaler* and specify Superior Valves and accessories. 3304

Superior
valve and fittings company
1509 W. LIBERTY AVE. • PITTSBURGH 26, PA.

ARI Forms Non-Residential Heater Section; Stern Elected Chairman

WASHINGTON, D. C. — A new product section, to be known as the Non-Residential Warm Air Heater Section, has been organized within the Air-Conditioning & Refrigeration Institute, with six member companies joining at the organizational meeting.

A number of other companies not now members of ARI are considering joining the new section, and a number of present ARI member companies manufacturing products within the scope of the new section are expected to join, ARI officials said.

N. H. Stern, marketing manager-Industrial, Lennox Industries, Inc., was elected chairman of the new section, whose recommended scope will cover "Warm air heaters, of 200,000 Btuh output and above, which are factory assembled and fire-tested, suitable for use with oil, gas, or a combination of fuels, consisting of a burner unit, heat exchangers, blower section, casing, and controls. These heaters are suitable for use with ducts, discharge nozzles, grilles or louvers, and filters."

A second paragraph of the scope is identical with the above except that the words "and fire-tested" are deleted.

Members of the section, whose representatives attended the organizational meeting, include America Foundry & Furnace Co., represented by Richard D. Long; Lennox Industries, Inc., Stern; Mammoth Industries, Inc., Dean C. Rupp; National Heater Co., Inc., George T. Costello; Tjernlund Mfg. Co., R. L. Tjernlund; York-Shipley, Inc., W. A. Lake and C. H. Nieman, Jr.

Costello was named the section's representative on the ARI board of directors.

An ARI standard will be developed for the types of equipment covered in the section's scope definition, and a certification program is contemplated following issuance of the standard.

Looking for a Business to Buy . . . ?
Check the Business Opportunities Section in the classified advertising columns.

N. J. Wholesaler's Trade Show Produces Encouraging Results

PARAMUS, N. J.—"Extremely encouraging results, especially for the relatively new air conditioning division," were derived from a second annual trade show conducted here this spring by Ral Supply Co., Passaic, N. J. and its wholly-owned subsidiary, Englewood Supply Co., Inc. of Englewood.

Alan Aufzien, executive vice president of Ral Supply, counted 1,850 guests at the two-day affair staged in the auditorium of the Bergen Mall shopping center.

About 31% were builders, 30% plumbing and wet heat contractors, 25% warm air heating and cooling contractors, 5% architects and engineers, and the remaining 9% about equally divided between mechanical contractors, utility men, and other guests, he said.

He considered this a good turnout as invitations were sent to 3,700 firms primarily from eight New Jersey and one New York county. The wholesaler sent out the original invitation to principals of these firms three weeks before the event.

Then 12 of the 14 displaying manufacturers followed with letters and invitations of their own, spaced so that invitees would receive only one invitation per day.

At the auditorium, 16 booths were placed around the complete perimeter of the auditorium. Three long tables seating 150 persons at a time, were set up in the middle of the room for dining.

A professional caterer served a buffet style meal for all who attended, with waitress service for coffee and dessert.

SOME SALES

As an inducement to sales at the show, contractors were offered a free reservation to the Ral-Englewood party with the purchase of merchandise from a booth. For example, 150 registers or three water heaters qualified for one party reservation.

The party consisted of cocktails, dinner, dancing, and a presentation of the Cole Porter musical "Silk Stockings" at the Meadowbrook Dinner Theater.

Approximately 100 reservations were awarded and total sales were substantial, Aufzien reported.

GOODWILL, LEADS

The trade show also generated an immeasurable amount of goodwill and a tremendous number of leads that were later followed up, Aufzien added.

"We feel that the trade show has and will contribute greatly to the company's efforts," he added.

Aufzien said that manufacturer participation in the show consisted of providing displays, literature, and personnel; absorbing approximately half the cost; and helping publicize the show with their mailings.

Ral furnished the equipment displayed from its stock, stood the other half of the cost, and planned and operated the show, providing such services as registration, catering, photography, setting up, material handling, booths, promotion, and advertising.

Guy Panero Dies

NEW YORK CITY — Guy B. Panero, 69, a consulting engineer who headed an engineering firm bearing his name, died recently at his home. He had been ill several months.

He and his enterprises participated in such projects as the New York Coliseum, Rockefeller Center, the New York International Airport, and the National Gallery of Art. For these and other projects, Guy B. Panero Engineers was responsible for the design of such features as air conditioning, heating, and ventilating.

Why does Lennox put all its eggs in your basket?

Indoor comfort is not a "sideline"—it's 100% of Lennox' business

The importance of dealers as a source of information is never underestimated. That's why John Norris (right), president of Lennox, maintains personal contact with dealers across the land. Many times suggestions from dealers have led to major improvements, or additions to the line which now includes gas, oil, and electrical heating systems, heat pumps, dual-fuel industrial heaters to 2,000,000 Btuh capacity, and air conditioning units from 2 to 25 tons.

We aren't concerned with making TV sets, dishwashers, sealing wax or anything else except central heating and air conditioning equipment.

It is our belief that this is important enough to deserve the complete attention and facilities of the manufacturer. Our entire manpower resources and 10 factories are devoted strictly to the business of indoor comfort. Your business.

This concentration in your industry gives you many dealer benefits—in addition to equipment with a reputation for quality. Factory trained sales and technical men are at your disposal—to help when you have special problems. The industry's finest schools are made available to your men—to improve their technical knowledge and sales ability. You get more merchandising and advertising support than any other manufacturer supplies.

But then—there are so many advantages of being a Lennox dealer we suggest you get the full story. Write your nearest Lennox factory or Lennox, 407 S. 12th Ave., Marshalltown, Iowa. No obligation.

Don't be satisfied with less than
LENNOX
HEATS, COOLS, TREATS AND MOVES AIR

IN HOMES IN CHURCHES IN SCHOOLS IN COMMERCE

LENNOX Industries Inc., est. 1895—Marshalltown, Des Moines, Ia.; Columbus, O.; Syracuse, N.Y.; Decatur, Ga.; Ft. Worth, Tex.; Salt Lake City, Utah; Los Angeles, Calif. LENNOX Industries (Canada) Ltd.—Toronto, Montreal, Calgary, Vancouver, Winnipeg

Cap Tube Systems

By Henry Ehrens, President,
Sealed Unit Parts Co., Inc., New York City

Part 7

Is there any way to check a cap tube system for restriction under normal ambients, and especially before charging it?

This particular problem has haunted me ever since the first cap tube and restrictor device came out.

Approximately 10 years ago I compiled a mess of figures and statistics on the flow rate through good cap tubes by measuring the flow of dry air supplied at a constant pressure.

While we used these figures in the shop to make comparisons, they were of no use in the field.

Then about five years ago I began working on the problems of "unit balance" and finally developed a testing instrument that we think is foolproof. We used it in our own plant for three years before deciding it could be marketed for service work in the field.

What do I mean by "unit balance?" When a cap tube is so designed as to create a pressure drop (restriction) between the condenser and evaporator that will supply the compressor with the proper flow of refrigerant to maintain the desired average temperature in the evaporator, I would say that the cap tube is "balanced" to the rest of the system.

In other words, for a desired average temperature in the evaporator, the cap tube has to feed a certain amount of refrigerant to a compressor that has a set capacity or volumetric efficiency.

Our new Ehrens Balance Tester (first described in the Jan. 9, 1961 issue of the NEWS) is designed to check the balance of a cap tube system in the field. Specifically, by measuring the flow of dry air through a system, the instrument shows whether the cap tube or strainer is restricted or if the compressor has lost efficiency, or if the system is okay in these respects.

Dial of the tester indicates balance, or the lack thereof, in terms of evaporator temperatures.

While there are some differences between individual makes and models, average evaporator temperatures of air conditioners will be in one range, household refrigerators in a lower range, and freezers in a lower range.

Size of the unit makes no difference, and surprisingly enough, the tester works the same on either R-12 or R-22 systems. It's not recommended for other refrigerants, however.

To check a cap tube system with the tester, all refrigerant is first removed from the system. (If the unit doesn't have service valves, tees or line taps must be installed on suction tube and discharge tube.)

THIS instrument will tell the serviceman if a capillary tube or strainer is partially restricted, or if the compressor has lost capacity, according to the manufacturer.

Connections between the unit and the tester allow dry air to be pulled through the system and discharged through the gauge of the tester.

Dial of the tester is calibrated to show what the average evaporator temperature would be if the system were properly charged with refrigerant.

We know in advance that the average evaporator temperature of a room air conditioner, for example, should run between 34° and 44°. If the instrument reads 26° after two minutes of operating the unit, then the cap tube or strainer is restricted.

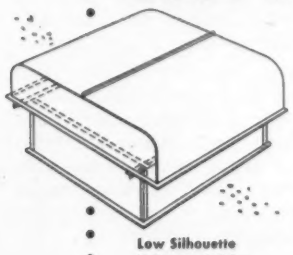
If the pointer stops at 60°, though, the compressor has lost efficiency. A cap tube can't get bigger in diameter or shorter in length by itself, so we know its pressure drop cannot become less than it was originally. Therefore, the trouble must be in the compressor.

Incidentally, if the tester indicates there is a restriction, check the strainer and replace it first if it is partially or completely clogged, and then test the system again for balance. It may not be necessary to replace the cap tube also, which takes about 10 times as long as replacing the strainer usually. This way you can save yourself hours of labor.

(The End)

Author of this series has had many years of experience with hermetic systems doing wholesale repair work as well as wholesale rebuilding of motor-compressor units in addition to manufacturing replacement parts and specialty items for the trade.—Ed.

GET RICH
WINDMAKER
ROOF FAN



- Low Silhouette
- Exhausts 4 Sides
- Quietest Operation
- BLADE SIZES: 20", 24", 30", 36", 42", 48", 54"

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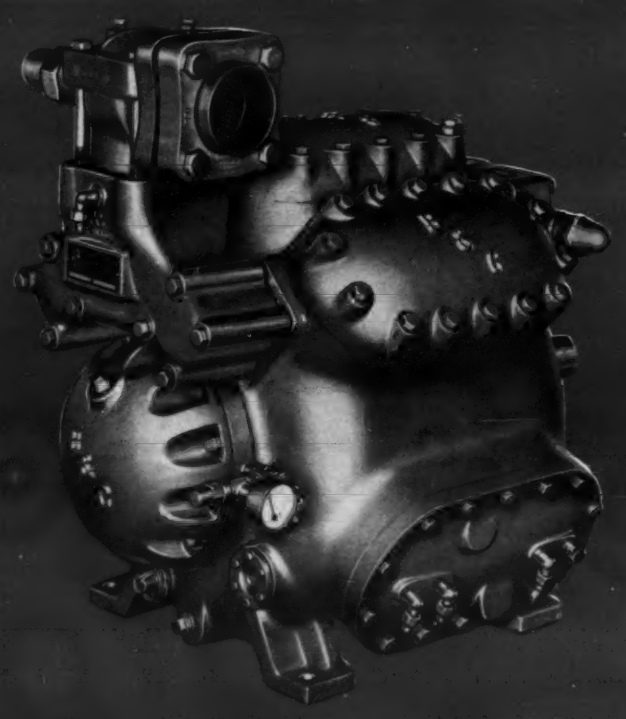
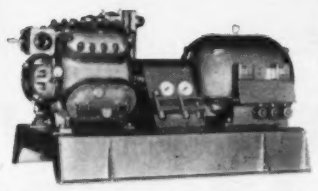
"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

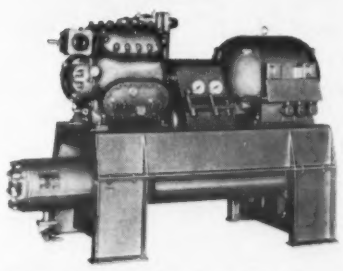
M-PAK*
MODULAR REFRIGERATION AND AIR CONDITIONING UNITS INCREASE AVAILABILITY... SPEED-UP DELIVERY

*Modular Packages

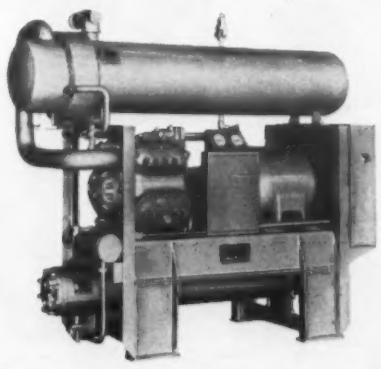




B&G Compressor plus B&G Motor becomes a B&G Motor Compressor.



B&G Motor Compressor plus B&G Condenser and base becomes a B&G Condensing Unit.



B&G Condensing Unit plus B&G Evaporator and Control System becomes a B&G Package Liquid Cooler.

In its M-Pak Modular Packages, B&G presents a new advance in efficiency designing of air conditioning and refrigeration equipment. M-Pak units are built around five basic sizes of open-type compressors. Factory-stocked motors, condensers, evaporators and controls can be added to these basic units to make a comprehensive line of "packages" of from 7½ to 150 tons.

For example, motor compressors are produced by adding a B&G-built motor to a B&G basic compressor. Further addition of a B&G condenser and a standard base makes a condensing unit.

All major components of M-Pak units are designed, manufactured, and guaranteed by B&G...*one* responsibility for the entire package. This, we believe, is an exclusive feature.

B&G also makes a complete line of refrigeration and air conditioning evaporators, condensers and centrifugal pumps—with many commonly used sizes available for immediate shipment from factory stock.

Send today for complete engineering and selection data on Bell & Gossett M-Pak* refrigeration and air conditioning units.

BELL & GOSSETT
COMPANY
Dept. GR-47, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

Fedders Distributor Offers Heat Pump 'Unconditional Performance Guarantee'

By Frank J. Versagi

LITTLE ROCK, Ark. — We warrant, to the qualified installing Fedders Heat Pump Dealer, that the installation of the Fedders Heat Pump Air Conditioner bearing the serial number below, will perform satisfactorily at the design conditions as shown on the system plan drawn by 555, Inc. and we will refund to the installing Fedders Heat Pump Dealer the full purchase price of the heat pump only, plus a labor allowance for removal of said unit, if said installation proves unsatisfactory within 90 days from date of installation.

This paragraph, written to the dealer, is the lead paragraph on the certificate of "Unconditional Performance Guarantee" being offered by 555 Air Conditioning & Heating Div. of 555 Inc.

Then, after offering the usual 1 & 4 warranty on the refrigeration cycle, 555 goes on to offer operating cost adjustments if these costs are found to be abnormally high "due to unit malfunction." The operating costs are compared to the estimated operating costs shown on the layout by the dealer in his sales story.

With the industry tending to back away from extended warranties, how does 555 justify its offer of guaranteed performance through its dealers to the end user? And what about economics; how can a distributor afford to back up its units so firmly?

Moral Obligation to Ultimate User Cited

"Our motivating principle," states Harry Tschumi, Jr., vice president of 555's air conditioning and heating division, "is that we have a moral obligation to the ultimate user. As an industry, the heat pump air conditioner has not made the impact which it should have. I am convinced that one major reason is the fear on the part of the potential customers that they may get stuck with an unimproved gadget that might become a lemon or white elephant."

555's guarantee program was designed to instill confidence in the customer and to generate loyalty and enthusiasm among dealers, offers Tschumi. The performance guarantee works like this:

How Performance Guarantee Works

The dealer sends in the plans for the house. 555 sends back to the dealer a layout and bill of materials. The dealer installs the system according to 555's layout, using only material specified by the distributor. The heat pump installation must be inspected by a 555 representative. Approved installations are then covered by 555's unconditional performance guarantee.

"On all new structures only, which are constructed in accordance with the plans that were submitted for layout, the operating cost will be adjusted if found to be abnorally higher, due to unit malfunction, than the estimated operating cost," states the company. This adjustment will not be made for any period prior to 60 days from the date reported, and "dirty filters nullify any adjustments."

Recognizing the importance of clean filters, 555, together with its dealer representative, makes it a point to instruct the new owner on operating the heat pump and on the procedure for changing filters. "Further, the customer is supplied with six changes of filters and instructed to change filters every 60 days," explains Tschumi. "Since the customer has been told the importance of clean filters and has been warned that dirty filters will void his guarantee, he becomes quite filter-conscious which is exactly what we want."

By insisting that all layouts be made by its own draftsmen; that all layouts must be approved by 555's sales manager or divisional manager; that no heat pumps can be delivered without executive approval; that all installations be inspected by a 555 representative, this Fedders distributor is, in effect, policing its dealer installations. It is this policing which has screened out the weak dealers, attracted the aggressive ones, and made it possible to sell quality installations without engaging in price-cutting competition, feels Tschumi.

"The dealer can bid the job with complete confidence that he will be backed up. Our suggested price includes one year service on the unit."

If, for any reason, the dealer should go out of business after selling an approved heat pump installation, 555 carries out that dealer's obligation to the ultimate user.

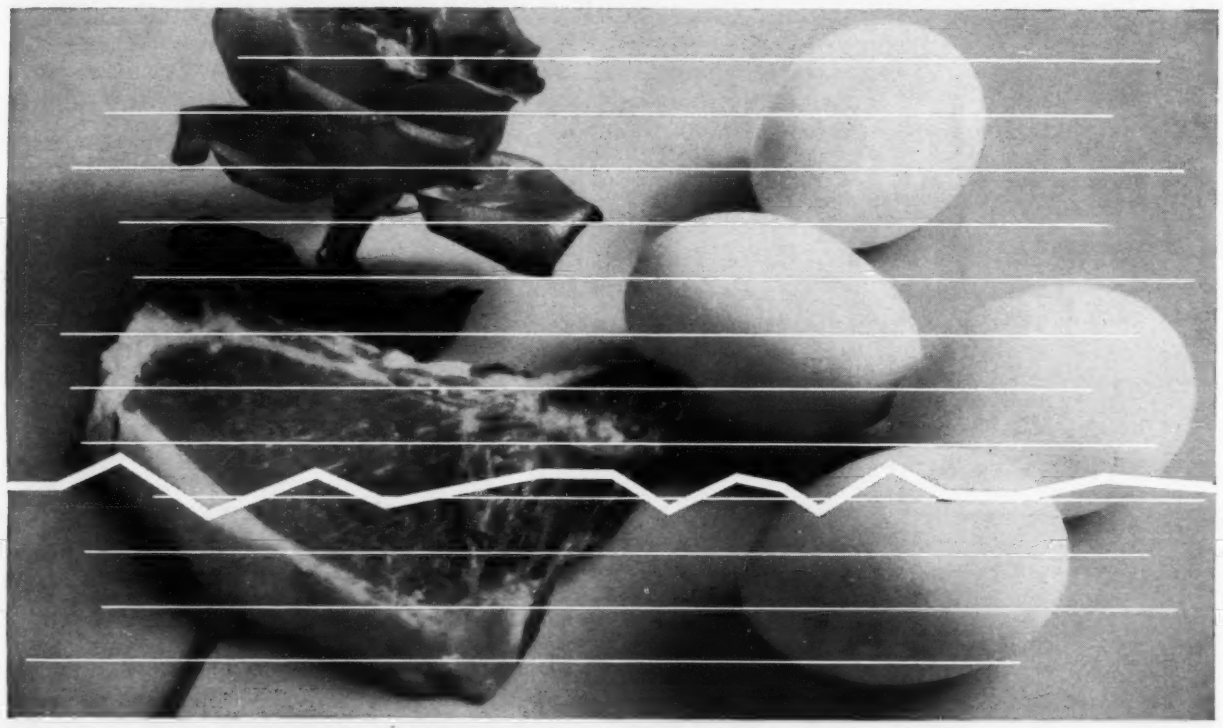
How Much Does It Cost?

"This all sounds very good in conversation," the NEWS suggested to Tschumi, "but how much does it cost in dollars to maintain this kind of a performance guarantee? And how many units are covered by the program?"

"Keep in mind," countered Tschumi, "that the overwhelming number of heat pump disappointments come from improper installation and misapplication, rather than from poor equipment design. Air handling systems, for example, are probably the major cause of heat pump complaints; they are too small or too big or unbalanced.

"Now, by controlling and policing the layout and installation, we eliminate the major cause of trouble. How successful have we been? Well, in the past year, we have installed more than 100 heat pumps under our performance guarantee. We have had not a single compressor replacement; we have had not one complaint of discomfort. I'd guess that we have spent less than half of previous amounts on in-warranty handling of the usual switches, relays, fans, and stuff which is inevitable with any mechanical equipment."

Actually, 555 began the performance guarantee program a couple years ago, but at first alerted only its dealers, not the ultimate user, to it—"to get the feel of the thing." In an instance or two, 555 has covered



UNIFORM TEMPERATURE
HIGH HUMIDITY
AUTOMATIC DEFROST

RANCO 019 TWO TEMPERATURE CONTROL is designed especially for use on commercial fixtures such as walk-in coolers, display cases, florist boxes. It effects frequent cycling of the refrigerator system to maintain uniform air temperature and high relative humidity. Duration of refrigeration from "cut in" to "cut out" settings is variable for each running cycle according to internal load and weather conditions. Setting points are individually controlled. Fixture air temperature is adjustable with a knob from 1 to 10 positions without affecting evaporator defrost. Write for further information and Technical Bulletin 1731.

Ranco® INCORPORATED
COLUMBUS 1, OHIO

In Canada: Ranco Controls, Canada Ltd., Toronto 18, Ontario

by the program units installed before it went into effect. A 1958 installation, for example, was performing badly because of a poor air handling system. 555 replaced the ductwork at no cost to dealer or user.

Incidentally, 555 insists on Gustin-Bacon ducts on those jobs which fall under the guarantee program. And the performance guarantee "does not exist on any equipment installed with any material or merchandise other than that which 555 Inc. normally distributes."

97% Consider Their Decision To Install Heat Pump Was Wise

For the past few years, Tschumi has surveyed his heat pump owners for their reactions to the comfort and operating costs they are experiencing. Some survey results:

—97% stated that after one or more seasons' experience they still considered their investment in a Fedders heat pump a wise one; 3% said no.

—25% stated that their electric bills were lower than the estimated operating costs; 21% received higher bills than estimated; 54% received bills approximately equal to estimates.

Tschumi doesn't just survey; he follows up. On one "bad" return, where the customer complained about high operating cost and insufficient heat, investigation revealed that the thermostat was in the wrong place and the ducts were too small. (This installation was put in before 555 began policing its dealers' installations.) 555 recommended "a 7-in. pipe to dining room, 6 to 8-in. ceiling box with 8-in. diffuser in den. Move thermostat to hall, 4½-ft from floor."

The surveys also give an insight into the reasons people buy: 56% stated that the chief reason they chose Fedders was the recommendation of a Fedders owner; 33% said they chose Fedders quality; 11% admitted they bought on price.

Interesting, too, is that 46% of the Fedders heat pump owners had considered other brands of heat pumps before buying.

'Strongest Dealer Organization In Area,' Utility Says

All this concern which 555 shows for its ultimate owners and its dealers has resulted in what Les Blades, air conditioning and heating coordinator of Arkansas Power & Light, calls "the strongest dealer organization in the area.

"What a wonderful thing it would be for the industry," Blades muses, "if all the distributors and dealers became this concerned with proper installation and with owner satisfaction and protection."

The power company executive cited figures to show that owning and operating costs are appreciably reduced when a heat pump is properly installed in a properly insulated house. (555 insists on 2-4-6 insulation as minimum.) Blades claimed some custom homes are getting cooling, heating, electronic air cleaning, dehumidifying, and humidifying "for $10 or $12 a month."

555 Inc. is actually a multimillion dollar business with several facets of which the air conditioning and heating division is only one. This heating-cooling division also acts as a refrigeration wholesaler. In another issue, the NEWS will report Tschumi's wholesaling philosophy and operation.

New Central Wyoming RSES Elects Officers

CASPER, Wyo.—L. K. Blower was named president of the new Central Wyoming Chapter of Refrigeration Service Engineers Society, at a charter meeting.

Other officers are Fred Teets, vice president; Joseph P. Murphy, secretary-treasurer; and O. L. Ragdale, sergeant-at-arms.

From the Manufacturers

Service Bulletins

In this department, the NEWS presents significant items from information that has been published in the Service and Technical bulletins of manufacturers.

While taking inventory, Joe Newcomer found an assortment of different size "cap" tubes in stock and couldn't determine the bore (I. D.). He called the City Desk man of his "Genetron" wholesaler for help. "It's easy, Joe," Mr. City Desk told him. "You can check the bore and determine accurately the I.D. of 'cap' tubes with the shank end of numbered wire drills. For example, check .028 I. D. tubing with a number 70 wire drill shank. Here are other size bores and the right drill size to use as a gauge for them: For .032 I. D. use a 67 drill, .035 = 65, .037 = 63, .039 = 61, .041 = 59, .043 = 57, and .052 = 55."

Numbered wire drills that match capillary tube bores may also be obtained at machine tool distributors.

GENERAL CHEMICAL DIV.

* * *

In continuous line-ups, NEVER RUN SUCTION LINE FROM ONE SET OF CASES THROUGH ANOTHER SET OF CASES THAT ARE ON DIFFERENT MACHINES. If this is done, liquid will condense in the suction line during defrost.

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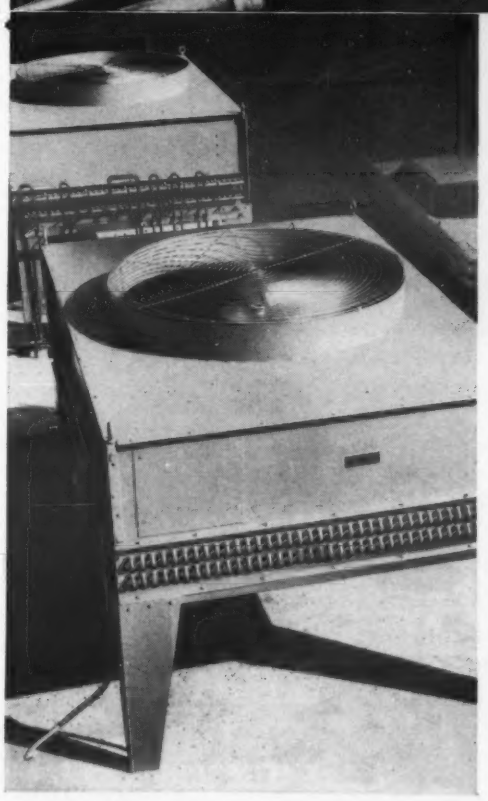

. . . H&M's Limitrol valve lets you use them year-round!"

"Many of my air conditioning and refrigeration systems have to operate 12 months a year. But cold weather used to raise cain with compressor-condenser balance.

"Then I learned that Halstead & Mitchell had a Limitrol pressure modulating valve that adjusts their air-cooled condenser capacity to compressor head pressure, whatever the outside temperature. What's more, H&M gives me multiple circuiting at no extra cost!"

You'd do well, too, to standardize on H&M Air-Cooled Condensers. There are propeller fan models with vertical or horizontal air discharge, and centrifugal fan models for inside installation with ductwork. Capacities of 5 to 100 tons.

Want more information? Call your parts wholesaler or write for Bulletin AC-102. Halstead & Mitchell Co., Dept. H-61, Bessemer Building, Pittsburgh 22, Pa.

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HM Halstead & Mitchell

TECH CENTER

by
FRANK J. VERSAGI

Plastics In Cooling Towers

In Germany, people are becoming accustomed to seeing scores of blue-green beetle-shaped cooling towers on their skyline. Made almost entirely of plastic (glass fiber-reinforced polyesters) the towers offer light weight and corrosion resistance which challenge the performance offered by conventional metal and wood construction.

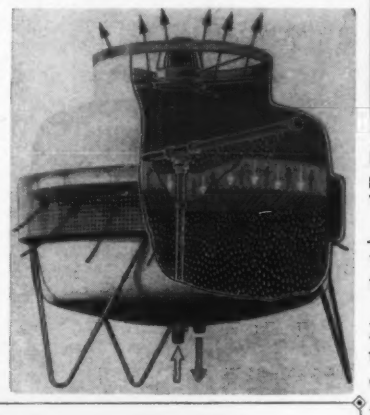
Manufactured by Escher Wyss GMBH of Werk Lindau, the plastic cooling towers are made in capacities from 80,000 to 5 million Btuh. The manufacturer claims the reinforced material will operate satisfactorily at ambient temperatures from -40° to 120°C, -40° to 248°F.

No U. S. Producer Has Gone 'All Plastic'

As yet, no cooling tower manufacturer in the United States has gone "all-plastic" as has Escher Wyss. Indeed, there is still strong opinion against the application of these synthetic materials, although several American producers have moved openly toward the use of plastics.

"We have experimented with several different types and forms of plastic but so far have been unable to find any suitable material economically priced," offers E. D. Goodfellow, president of Goodfellow Co., Inc., Memphis. "To our way of thinking, if plastic is to be substituted for either wood or galvanized steel for tower filling, it should be rigid, non-deteriorating, and, above all, fireproof. To the best of our knowledge, several manufacturers are using polystyrene fill which is extremely flammable and, in one case, the manufacturer has discontinued use of this material."

FIG. 1—This beetle-shaped, all plastic cooling tower is being sold successfully in Germany. Its light weight makes applications of large capacity towers possible without the need for structural reinforcement of the supporting members, according to the manufacturer, Eschel Wyss, of Werk Lindau.



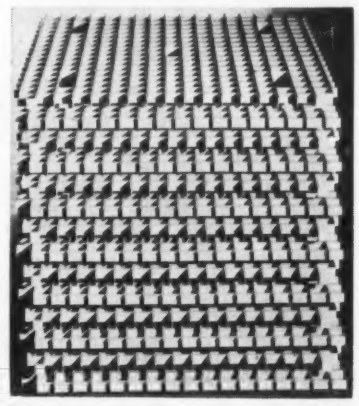


FIG. 2—Polystyrene cooling tower grid packing as used by Fluor Products Co. The photograph shows a typical stacking arrangement.

Acme Industries, Jackson, Mich., is one company which uses polystyrene. Commenting on the problem of flammability, Acme's director of engineering, H. R. Krueger, states, "—Another disadvantage of the material is its high volatility, but preparations are now available which will pass the requirements of ASTM for non-flammability."

A few contractors have told the NEWS, however, that they feel uneasy using polystyrene materials in the field. "You never know when some guy with a torch is going to get careless."

Fluor Products Co. joins Acme in reporting that it has had no difficulty with polystyrene. "During the past year, approximately 275,000 of our grids, representing approximately 500 tons of plastic, have been sold," states Thomas H. Hamilton. Fluor has been using the polystyrene grids for almost five years. The company has also supplied a few towers with reinforced polyester siding.

Field Criticism of Reinforced Plastics

Such reinforced plastics have come in for some field criticism, too. According to one manufacturer, cut edges of the material lift and peel back when exposed to salt air. "The broader surfaces weather well, although these, too, check quite a bit."

Havens Cooling Towers' chief engineer, Bruce B. Brand, reports that his company has been unable to find anything that will compete with redwood for cooling tower fill.

"We have found that plastic fills are too smooth and do not wet enough; they do not hold the water long enough to be efficient," offers a contractor.

No one questions the superior corrosion resistance of the synthetic materials, although Havens comments that "We do not believe any plastic material which is sprayed or dipped onto sheet metal will stand up under shipment as well as does hot dip galvanizing."

Goodfellow, on the other hand, does use epoxy coating on its painted towers.

It is generally agreed that Acme pioneered the use of plastics in cooling towers for refrig-

REFRIGERANT-22: HERO or VILLAIN?, the popular 4-week series discussing the advantages and disadvantages of R-22, is now available in reprint form. Single copy, 25 cents; 10-49 copies, 20 cents; over 50 copies, 15 cents.

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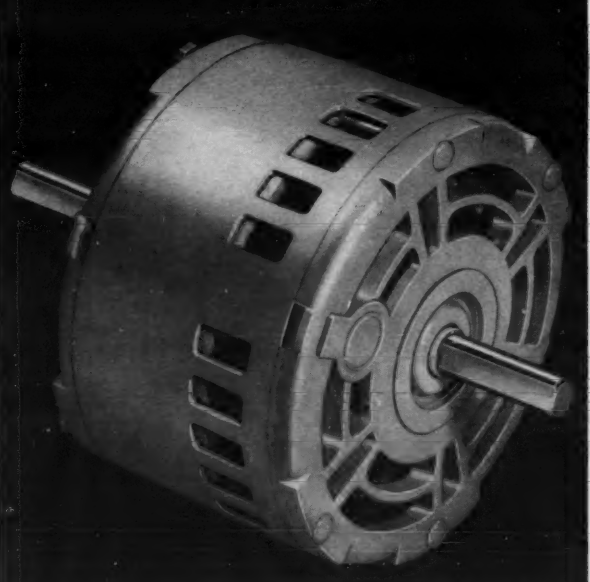

Model 6E (6 pole—1050 rpm)—Quieter and cooler running than any current design motor, this new Leece-Neville PSC motor can put an end to your problems of high current drain with low current requirements. New design features assure highest power factor and efficiency in room air conditioning use.

Model No.	Ratings
806E	1/2
646E	1/3
486E	1/4
406E	1/6
326E	1/10
246E	1/15

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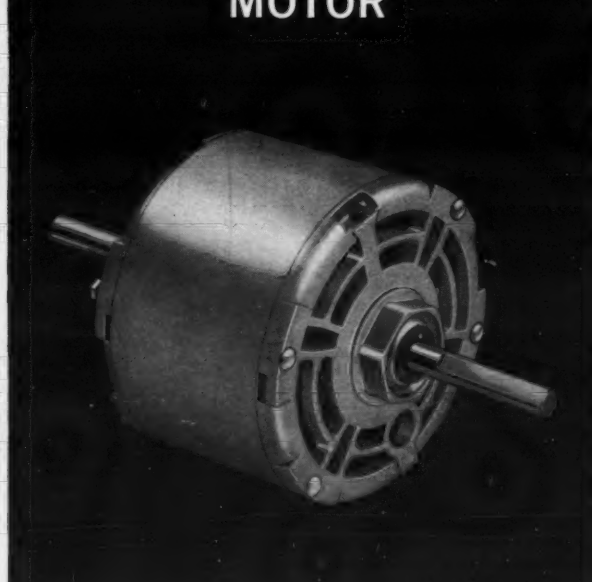

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406D	1/10
326D	1/12

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FIG. 3—This nozzle, 6½ in. high is made from polypropylene and is used by Fluor, "at the rate of 3,000 per month."

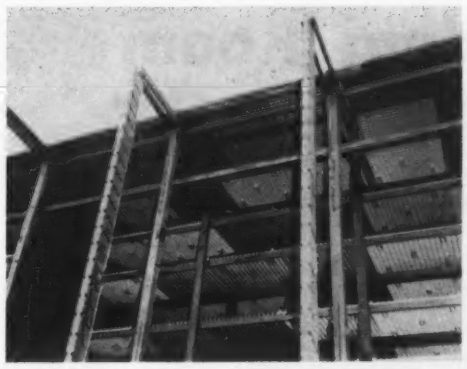

FIG 4 — Partial view of 40,000 polystyrene grids used in a power plant cooling tower. Dimensions of each grid is about 3-by-3-ft, according to Fluor, which adds that "because of the cold creep characteristic of polystyrene, the grids will not span more than 3 ft."

eration and air conditioning applications. The company's years of experience and its current opinions are summarized by Krueger:

"We have for a number of years used high-impact polystyrene eliminators in our induced draft cooling towers with excellent results. We experienced some difficulties at the beginning of this application because of the tie up with the steel in the tower. It became obvious that adequate means of support of the plastic was essential to keep the metal from tearing at the plastic shapes and cause the eliminators to fail.

"Our research with plastics was along the lines of corrosion resistance, design flexibility, and economics.

"Contrary to the opinions of a lot of people," Krueger suggests, "economics was not the major consideration, although it certainly plays a part in design flexibility: tooling and production costs are certainly simplified when working with plastics. We have found that we can experiment with various shapes of plastics in our attempt to develop more efficient designs without having an extremely expensive development program."

Krueger recognizes that the low melting point of polystyrene limits its use around high temperature waters and steam.

"We have extended the use of polystyrenes into wetted deck material for cooling towers and to replace metals in air in louvers of cooling towers and evaporative condensers.

"For a long time, we were saddled with the extremely high cost of solid brass spray nozzles," Krueger recalls, "but we hit upon the idea of molding these from a special high impact formulation plastic. Five years' experience has proved to us that this material is slightly superior to the metals in that it does not lime up as rapidly."

Acme has chosen linear polyethylene as the material for a water baffle on a new line of water coolers. "The material is free-machining, giving long drill life; it provides a waxy surface which simplifies the loading of copper tubes; it provides closer tolerances between the tube and baffle, eliminating much water by-pass."

The company admits that "an educational program" was needed to eliminate the use of excessive heat on the vessels once the plastic was inserted.

"When we began to manufacture units with brazed-in tubes to tube sheet, we searched for a reasonable coating that would provide a good gasket surface and also be completely waterproof to protect the highly troublesome cell established by the use of silver solder with copper and steel.

"We first selected an epoxy resin which was poured onto the face of the tube sheet providing a thin protective film. We found that the epoxy formed a meniscus at each tube and provided a perfect seal between the water on the outside and the metal beneath. After some use of this material, we encountered some shattering of the epoxy, with resultant metal exposure.

"This was solved by the addition of aluminum into the epoxy compound, providing a very tough shock-resistant finish," Krueger concluded.

Acme is presently conducting extensive study of several applications of foam-in-place polyurethane insulation.

Fluor Products has had success using a polypropylene nozzle which is approximately 6½ in. high. "Polypropylene offers superior resistance to chemical attack and to hot water temperatures," states Hamilton.

Phillips Cooling Tower Co., Inc., Brooklyn, tried epoxy resin paints as coating applied to field-erected basins, "but without very much success, and we have discontinued using this material," according to John J. Murphy, vice president.

Phillips also has used polystyrene as fill material for a year or two, but the company does not feel its experience is sufficient for it to offer any conclusions. "We have used the material only in the temperature range of 110° to 85°F," Murphy explains.

Prodded by the failure of conventional materials in ocean areas, Higgins Metal Products Co., Swanton, Ohio, is "seriously considering making the steel jackets of our cooling towers from some type of rigid plastic material."

For fill material, however, President Irvin A. Higgins, sticks with the traditional. "We are not in accord with the wet decks being made of anything but redwood."

Higgins is experimenting with an aluminum-epoxy finish for the interior of towers using chemically treated waters. "Many types of chemically treated water deteriorate some plastics more readily than they attack steel," the company has found. "With aluminum-epoxy material, temperature limitations are not a factor," adds Higgins.

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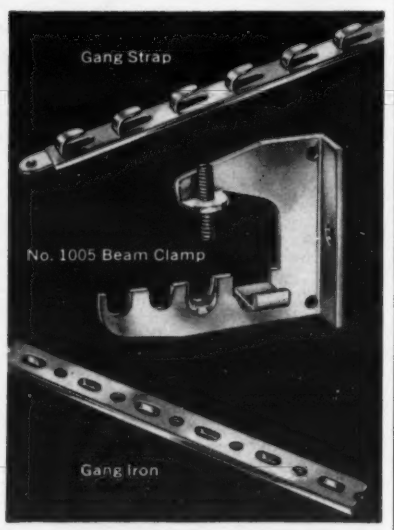

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Strap will support six ¼" O.D. tubes, or used in multiple for more than six ¼" tubes. Can also be used in combination with No. 115 Minerallac Jiffy Clip for supporting five ¼" O.D. tubes and one ⅜" O.D. tube. Made of 22 Gauge U.S.S. cold rolled steel, one-half hard, zinc plated. Available in 6' and 30' lengths.

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Clamp will support three ¼" O.D. tubes or two ¼" O.D. and one ⅜" O.D. tubes, in various positions on beams. Can also be used in combination with Minerallac No. 505 Gang Strap. Made of 15 Gauge U.S.S. cold rolled steel, one-half hard, zinc plated. Comes complete with set screw.

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For Plant Employes

Modine Launches Product Information

RACINE, Wis.—A product information program that is oriented toward the employe, rather than the consumer, has been launched by Modine Mfg. Co.

Modine has initiated the new program in its main plant in Racine so that employes can become better acquainted with the company and the diversified products it manufactures in four plants in as many states. The information is expected to be particularly helpful to office personnel and to production line employes who may work on only a small part of any given product.

Products marketed by Modine include heating, air conditioning and ventilating equipment, steam specialties, and automotive and industrial heat transfer products.

Under the program, product information is supplied to the employe in three ways:

1. A product display case that has been erected near the entrance to the factory area. In addition to the actual product, there are photos of typical installations, catalogs, ads, and sales aids which show how and where the product is merchandised. Also included is a list of competitors making the same equipment. The equipment on display will be changed about once every two weeks.

2. Plant tours for office personnel. The tours will last about two hours and be limited to a maximum of 10 persons at a time.

3. Catalog binders with product information which have been supplied to foremen in each department. These may be borrowed by employes overnight or on weekends.

Day & Night Names H. P. Schoerner

LA PUENTE, Calif.—The recent appointment of H. P. Schoerner as manufacturing manager of the Day & Night Mfg. Co. production facilities here has been announced. He succeeds the late Harold Clifton.

Schoerner's appointment came after 15 years of experience in the manufacturing phase of the Day & Night organization. He first joined Day & Night in 1946 as a spot welder. Through a series of advancements, he became manager of production control and served in that capacity until now.

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Air Conditioning In The Bottling Room

*By John Shaw, The Coca-Cola Co., Atlanta**

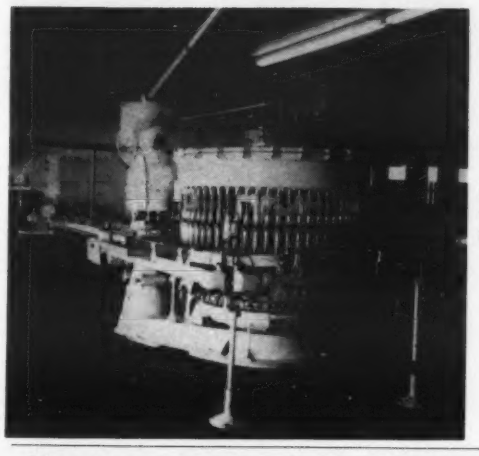
THE IDEA OF air conditioning bottling rooms in plants is not entirely new; several franchise houses have used this feature in bottling plants in recent years. The writer explains the difficulty of overcoming the bottle washer heat in this area and suggests several methods how this problem can be overcome.

The heart of a soft drink production plant is its machinery area—it is nearly always the part of the plant that costs the most money—the part that frequently houses a quarter of a million dollars worth of machinery, and the part that the bottling plant owner must show first in his plant tours.

Machinery manufacturers, quick to realize the advertising value of a machine that is good-looking, have often gone far beyond the requirements of quality to manufacture a machine that has aesthetic lines as well as functional qualities.

Architects have frequently designated the bottling room area for public display by constructing it as a separate room, fronting it with glass and accentuating the spotless appearance of the room by using varicolored faience finishes of tiles and enamels which emphasize the shining stainless steel and white-painted machinery used in this room.

*An address delivered at the Special Meeting Session held in conjunction with the 42nd Annual ABCB Convention and Exposition in Detroit.



PUTTING entire washer in separate room from filler raises production flow problems.

Plant tours are now a well-accepted part of our total merchandising and advertising program, and it is generally the aim of management to make this area a showplace where the Bottler can exhibit the cleanliness of his processes and procedures to the public.

Nor is this attention to this area purely for aesthetic reasons—the necessity for faultless quality control is now an accepted part of most Bottlers' programs as well as becoming, in varying degrees, a part of the by-laws and codes of many authorities.

Why Air Conditioning?

Now, I have painted a picture of the desirability, nay the necessity, for making this bottling room the showplace of the plant. Imagine, if you will, the surprise of a visitor on entering this room. A steamy, hot, and humid atmosphere prevails, employe discomfort is high, tempers are short, and worst of all public reaction is poor. The room is spotless but the air is anything but what you would expect in a showplace—a clean showplace.

But the place is clean—in everything except the air through which the empty bottles must pass before being filled. The air is dust laden, certainly not a type of atmosphere under which you would expect a careful quality process to be conducted.

How Much Dirt, Dust In Air

Just how much dirt or dust is in the air?

To find the answer to this question we talked to Dr. Lewis McCabe, a member of the National Advisory Committee on Atmospheric Pollution. He states that a dirt fallout of 50 tons/square mile/month is not uncommon in large polluted cities. Even Washington, D. C. has an average fallout of 34 tons/month, and one city, in the same year, had a fallout of 200 tons/square mile/month.

Even fairly small urban areas would not necessarily escape, and depending on their location, environment, and industry, figures of 15-20 tons/month/square mile would be fairly representative.

Of particular interest is his prediction of the future. He says that this fallout is likely to increase rather than decrease as the population and industrial and other activities multiply.

He pointed out that practically all of these outside air pollutants are filterable by using either a mechanical type of disposable filter or an electrostatic air cleaner, and that efficiencies of 95% are not uncommon.

Now in the summertime, the average bottling room pulls in 35 to 40 air changes per hour of this dust laden outside air and to thoroughly clean this considerable volume of outside air would be an economical hardship and in many cases would be quite impractical.

Cooling Reduces Air Changes

Some means must then be found to reduce the volume of incoming air. This can be done by cooling the air, thereby decreasing the required air change rate from 35 to 40 to about 8 to 10 changes per hour.

Why this difference in change rate when using refrigerated air?

On a hot day we are all familiar with the amount of hot air that is required to cool us. Under average conditions we have to stand quite close to a fan and a considerable velocity of air is required to move over us to give the necessary skin cooling to produce the sensation of body cooling. This isn't true in an air conditioned room—a relatively slight velocity of air is all that is required to cool us.

Hot, humid air takes a lot of air to cool; cold, dry air takes a small amount.

Let us look now at what it takes to air condition a bottling room. The first thing one thinks of is the bottle washer—a heat and steam producing object that usually sits in the bottling room and gives off a considerable quantity of heat.

Many people have said that it is impractical to air condition this room because of this machine. There are four different basic types of layouts that have been tried—let's look at them.

ENTIRE WASHER IN A SEPARATE ROOM [see picture above]: In this instance the washer is located in a separate room from the filler. This procedure could raise production flow problems.

WASHER PROJECTING A FEW INCHES THROUGH THE WALL: In a slow speed line this layout has the disadvantage of the number of bends between the washer discharge and the filler, however, in a high speed layout it has the advantage that you can provide plenty of storage space for the empty pottles between washer and filler.

This layout generally requires that the area be specifically designed for this treatment as the washer projects back into the stockroom, thereby making it unsuitable for some arrangement which cannot spare this amount of depth for this type layout.

Where a slow speed or medium speed unit is required the following two arrangements have been used.

WASHER HALF IN AND HALF OUT OF ROOM: This arrangement has the disadvantage that it allows a portion of the hot part of the washer to project into the room. This disadvantage can be eliminated, however, by erecting a dog-legged partition which excludes the hot part of the washer out of the room.

WASHER ONE-FOURTH IN, WITH DOG-LEG PARTITION [picture above at right]: In this arrangement showing a dog-leg

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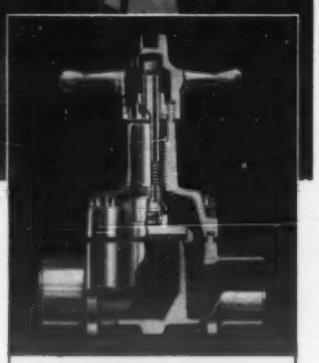

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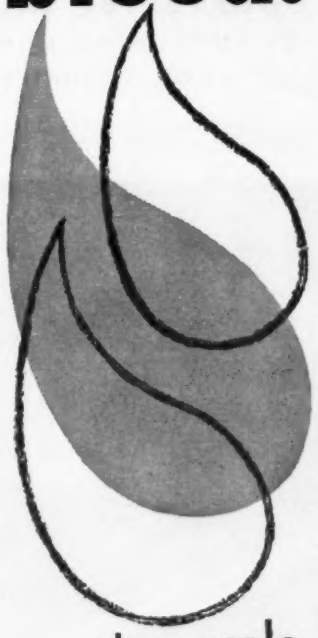

stop scale before it starts

Cooling tower treatment, closed recirculating systems, or neutralizing airborne acids . . . CSCO Solvex Maintenance Formula handles them all . . . and eliminates the need for expensive bleed-off. As little as a half pound of Solvex Maintenance per ton of refrigeration per month reduces scale and corrosion — neutralizes acids — and saves water. Only monthly flushings and Solvex Maintenance are necessary. Available in tablets or grains. Insist on a quality Solvex product.

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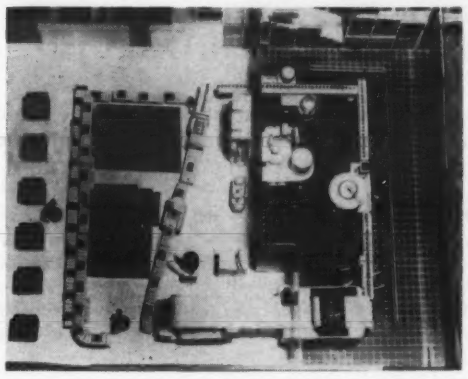
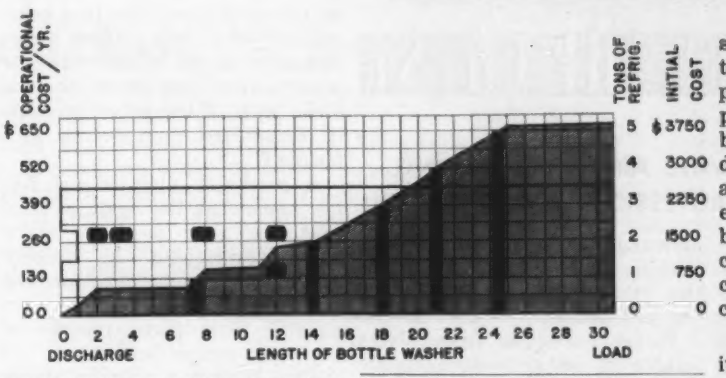
BIRMINGHAM, ALABAMA

ASK YOUR WHOLESALER



WASHER one-fourth in with dog-leg partition allows important space for cooling, carbonating, filling, and inspection arrangements.



BOTTLE WASHER GRAPH SPECIFICATIONS: 1. Indoor design temperature assumed at 80°F db, 65° wb. 2. Bottle washer: 5 compartment 28 wide ½ pt. liquid with two 10 hp and three 5 hp motors. 3. Bottle washer is completely sealed except for its discharge and load ends. 4. Air velocity assumed at 50 fpm. 5. No provision for people, other machinery, size of room, or other sources of heat.

partition, most of the washer is kept outside the bottling room and yet leaves important space for the cooling, carbonating, filling, and inspection arrangements. There are, then, two best solutions to the problem.

1. For the high speed line, place the entire washer behind the partition.

2. In the slow speed or medium speed line construct a dog-leg partition as shown.

Now, as was said earlier, many people have voiced the opinion that it is entirely impractical to air condition this room with a washer in it, and in order to analyze the validity of this argument we took tests of the surfaces of an operating bottle washer.

These temperatures were measured at regular intervals along *all* surfaces of the washer and also the temperature was taken of the clean bottles emerging from the discharge. Note was also taken of the horsepower of the motors and a calculation made of the heat given off by these units under load conditions.

These temperature figures were then translated into British thermal unit figures to arrive at the amount of heat emitted by the unit; and, concurrently, the amount of refrigeration required to dissipate this heat.

Measurement Data

[Referring to a bottle washer graph (see above), Shaw continued.]

Note that this series of measurements are based on certain specifics:

1. A recommended reasonable wet and dry-bulb ambient temperature.

2. A specific bottle washer.

3. This washer is completely sealed except for its discharge and load ends.

4. An assumed air velocity of 50 feet/minue, which is the normal speed of air circulation under refrigerative cooling conditions and is one of the factors that determine the amount air cooling required to cool this heated air.

5. This calculation is for the bottle washer only — employe latent heat load, other machinery or external heat loads are not considered—the purpose of this calculation is limited to the amount of air cooling required to dissipate the heat liberated by the bottle washer only.

Deductions from Graph

The deductions that can be drawn from this chart are that if a separate bottling room can be built and the partition located at a strategical point (in the example shown it was found to be 12 ft from the discharge end of the washer), then not more than 2 tons of refrigeration will be required to dissipate the sensible heat from this unit.

The latent heat can be dissipated by relatively minor modifications to most washers—water locks on lids, the erection of a stack to remove some steam from the bottle washer—all these are things that have been done—with success.

Improved operation of electronic bottle inspection machines and other equipment in a dry atmosphere is well established. Air conditioning with its control of the humidity offers this. Improved employe moral both in regard to the conditions under which they work and their pride in their part of a production under quality conditions is a valuable asset.

And last, but not least, the head held high, pride of conducting the public through this area — this showplace of his plant. Call it public relations if you will — valuable public relations where we can point with pride to an operation performed under the maximum of sanitary facilities.

And the cost — relatively slight in terms of the advantages to be gained. Quality, employe moral, machine efficiency, public relations. The cost for both cleaning and cooling will depend on the size of the room and the heat loads that can be excluded, but has in many cases been as low as 1% of the machinery cost; surely a small cost when you compare it to the cost of a production line.

This clearly shows then that it is quite within the realm of economical feasibility to provide air cooling and cleaning in a properly designed bottling room and that the heat emanating from an average bottle cleaning machine is not a serious deterring factor—in fact, our research has shown that providing cool, clean air to this essentially sanitary process is and can be well within the reach of all Bottlers building new plants.

Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

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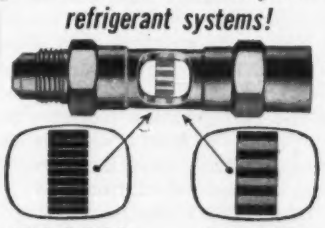
Your opportunity may be there.

Simplest, most economical way to detect moisture in your refrigerant systems!

Positive Sealing
LIQUID EYE®
INDICATOR
featuring the built-in
MOISTURE-REACTOR



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The MOISTURE-REACTOR is composed of alternate, permanent and changing (Reactor) color bars. When all the bars appear the same color (green)—it's good—there's no moisture in system.

IT'S BAD

If moisture enters the system, every other color bar changes from green to yellow—then it's bad—the dehydrator should be replaced. When the system is moisture-free again, the Reactor color bars will change back to their original solid green color.

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410 NORTH HERMITAGE AVE. • CHICAGO 22, ILLINOIS

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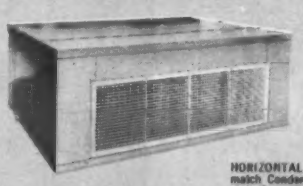
CONDENSING UNITS—7½ to 20 h.p., multiples for higher ratings • Rugged • Quiet • Weatherproofed • Diagonal coil for minimum plan area • Controls wired and enclosed • Compressor section may be detached • Designed for outdoors.



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PROPOSAL WOULD ELEVATE AIR CONDITIONING ENGINEERS TO PROFESSIONAL LEVEL

3633 W. Slauson Ave.
Los Angeles, Calif.

Editor:

I have read with considerable interest your article titled "Is PE With Low Cooling Experience Best Fitted To Design Installations?", that appeared in the "What They're Saying, Doing" column in the April 24 issue of the NEWS.

As you no doubt know, part of the underlying problem is due to the fact that it was not until quite recently that air conditioning engineering courses were made a significant part of an ME curricula. The majority of qualified air conditioning engineers, presently active in the field, acquired their specific training by attending one or more engineering courses sponsored by major manufacturers of air conditioning equipment. Many others obtained their specialized skill by "rubbing elbows" with other older field-trained air conditioning engineers.

Even today they are relatively few colleges or universities that bestow an air conditioning engineers' degree. Some colleges are, now, adding several courses in air conditioning engineering, but still very few have elevated air conditioning engineering to the rank of any of the other recognized engineering professions.

In my particular case, I was unable to obtain adequate air conditioning engineering while attending a major university where I obtained my engineering degree. My air conditioning and refrigeration training and know-how was acquired while attending courses sponsored by one of the leading manufacturers, and by practical experience.

After spending 20 years in the air conditioning field, and after having been exposed to many engineers, and having worked with and for engineers, I would say, without hesitation, that the complexities of air conditioning engineering applications justify placing air conditioning engineering on the same professional level of other branches of engineering.

Over the last few years I have given this matter considerable attention, and have also discussed this situation with many engineers who recognize the present dilemma, as outlined in your article. It appears to me that the best solution, the most fair and practical way out of this dilemma, is for all concerned to unite in a common effort to bring about legislation so as to elevate the air conditioning engineers to the same level of the other presently recognized engineering professions.

A workable plan should follow somewhat the same pattern that has been used by many states throughout the country at the time when legislation was introduced to register engineers as PE. This plan consists of the three stages below:

(1) Within a specified time, allow all presently qualified air conditioning engineers to apply and to receive, if meeting certain basic standards, a PE license. This PE license to permit the engineer to practice as an air conditioning engineer only.

(2) Allow college graduate engineers, after a short field training, to apply for a PE air conditioning engineers' license. These graduate engineers should, of course, be required to pass an oral and written test with emphasis on air conditioning engineering subjects, rather than truss design, aero-dynamics, missile design, etc.

(3) Encourage major colleges to develop a complete curriculum leading to a full-fledged BS degree in air conditioning refrigeration engineering.

In sincerely hope that you pursue this matter vigorously, as I am very well convinced that several of the current problems afflicting the successful growth of the air conditioning business can be directly traceable to the conditions that you so well covered in your NEWS article.

When I speak of problems, I am not only thinking of the obvious engineering problems, but I am also thinking of the buyers of air conditioning systems, who at the present time, in many cases, are "short changed."

To conclude, I would like to say that the opinions expressed above are strictly my own, and in no way reflects the opinions of the company for which I have been working for several years.

HIRAM Z. ANDRADE

KALAMAZOO INDOOR COMFORT BUREAU OPPOSES MANUFACTURER'S 10% DISCOUNT PROPOSAL

Kalamazoo Indoor Comfort Bureau, Inc.
Kalamazoo, Mich.

Editor:

We notice that you are keeping all the contractors well informed on the Silver Shield Program throughout the U.S. both by reprinting the Kalamazoo Story and also telling the readers about the various cities which are holding Silver Shield meetings.

I thought it would be of interest to you to know how the members of the Kalamazoo Indoor Comfort Bureau feel about the recent announcement by a manufacturer of home heating equipment in regard to cutting their profit 10%.

You have our permission to publish the attached letter in the NEWS.

* * *

Attn: Mr. Isidore Morrison
Buffalo, N. Y.

A number of our members have received and read your letter addressed to "Fellow America" and a copy of the letter sent to our Honorable President. It appears to us that this was only a promotion idea and in our opinion a very poor one. We are very fortunate this news item was not published in our local paper.

It is the desire of the members of our Bureau that a manufacturer consider the public and devote more of their efforts to giving the Homeowner a better heating system. We are certain that you will agree with us that today many homeowners are buying equipment which will have to be replaced before their home is their own and are not enjoying true indoor comfort.

We also all know that cutting our profit 10% would not spark our economy because very few manufacturers and contractors made 10%, therefore, it would only increase our problems.

We think you will agree with us that a better way to spark our economy is to go out and sell comfort and create a greater desire for a better heating system. This is what the Kalamazoo Indoor Comfort Bureau is doing.

If you have not read the Kalamazoo Story printed by the National Warm Air Assn., I would suggest that you write them or I would be glad to forward you a copy.

We, as contractors only hope that after reading this story you too like many manufacturers and contractors will realize the public desires something more than a 10% discount.

Glen W. Rynbrand

HOT ISSUE IN AIR FORCE

Strategic Air Command
--- Air Force Base

Editor:

Your recent editorial concerning the Air Force contractor's lack of knowledge of refrigeration evacuation has become a real hot issue in the Air Force. It was quite surprising to some of us to learn that a number of civilian agencies closely related to the refrigeration industry do not have a firmly established idea of what constitutes proper field system evacuation.

Our current specifications call for an evacuation to within 100 microns of perfect vacuum with a rise not to exceed 400 microns during a period of 30 minutes following evacuation shutdown. Current Corps of Engineers specifications call for an evacuation of 29½ in. of mercury for a period of 12 consecutive hours.

This subject of proper evacuation appears to have equal interest to the Hero-or-Villain discussion of Refrigerant-22 which you began.

Mechanical Engineer

IS HIGH / LOW LINE VOLTAGE GIVING YOU SERVICE PROBLEMS?

Never understimate the trouble that excessive voltage or low voltage can cause to electrical equipment and devices. Check the voltage every time you make a new installation, every time you make a service call. And, if voltage is more than ±5% of normal, recommend and install an Acme Electric Boost and Buck Transformer to correct voltage to the normal required by the connected load.

- **AVOID BURN-OUTS BY CORRECTING EXCESSIVE VOLTAGE**

High line voltage makes motors heat faster, deteriorates insulation, causes motors to burn out; shortens life of electronic tubes *(including tv picture tubes)* and incandescent lamps; increases operating cost per hour. An Acme Electric transformer connected to buck a high line-voltage can correct these problems.

- **GET MAXIMUM PERFORMANCE BY CORRECTING UNDERVOLTAGE**

Motors fail to reach their maximum torque when line-voltage is much below normal, and often continue to operate on starting windings until they heat up and burn out; electronic tubes fail to function properly; fluorescent and incandescent lamps are reduced in light output. An Acme Electric voltage boosting transformer can correct these conditions and save money.

- ***SEND FOR THIS BULLETIN***

Boost and Buck Transformer Bulletin 5A3 contains 15 valuable reference charts, and tabulations providing an instantaneous method of determining size of transformer needed for any load under any off standard voltage condition. Write for your copy.

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INCREASE YOUR AIR CONDITIONING EFFICIENCY AND ECONOMY BY REMOVING AND PREVENTING SCALE, RUST AND CORROSION IN ALL TYPES OF AIR CONDITIONING SYSTEMS.

AIR-CON EMULSION SAND-BANUM

Circulating Water Treatment for OPEN Type Systems.
A Proportioner is available for larger systems for automatic feeding of Air-Con into the tower.

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Circulating Water Treatment for CLOSED Systems.
Gradual action avoids violent removal of old scale. Apply under normal operating conditions in absolute safety.

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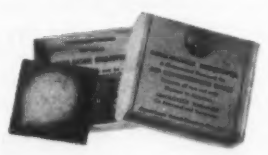

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Removes and Prevents Rust and Scale Formation and Corrosion with Simplicity and Safety. Guaranteed Harmless to Personnel and Equipment.
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DIESEL AND FUEL OIL TREATMENTS
Agencies in Principal Cities

These Plants Are Staying Open

The following plants have informed the NEWS that they follow staggered vacation schedules or have no plans for closing at any time during the summer. Companies marked with * will close for vacation or inventory in the fall or winter. Dates will be given later.

Ace Cabinet Corp., New Bedford, Mass.
Aeroquip Corp., Jackson, Mich.
Air Control Products, Inc., Coopersville, Mich.
Airserco Mfg. Co., Pittsburgh.
Alco Valve Co., St. Louis.
Allin Mfg. Co., Chicago.
American Automatic Ice Machine Co., Faribault, Minn.
American Sand-Banum Co., Inc., Merrick, N. Y.
American-Standard Controls Div., Detroit.
Anaconda Aluminum Co., Louisville, Ky.
Auto-Flo Corp., Detroit.
Bahnson Co., Winston-Salem.
Barkow Mfg. Co., Inc., Milwaukee.
Bayley Blower Co., Div. of Green Fuel Economizer Co., Inc., Beacon, N. Y.
Binks Mfg. Co., Chicago.
Bonded Hermetic Re-Mfg. Co., Inc., Brooklyn.
Bossman Controls Co., Chicago.
Burt Mfg. Co., Akron.
Capitol Refrigeration, Inc., Dallas.
Carsco, So. El Monte, Calif.
Century Electric Co., St. Louis.
Century Engineering Corp., Cedar Rapids, Iowa.
Chemical Solvent Co., Inc., Birmingham, Ala.
Chicago Valve Plate & Seal Co., Chicago.
Clarage Fan Co., Kalamazoo, Mich.
Climatic Air, Dallas.
Cobell Industries, Inc., Cleburne, Texas.
Comfort Products, Inc., Dallas.
Congress Drives Div., Tann Corp., Detroit.
Coolenheat, Inc., Woodbridge, N. Y.
Curtis Mfg. Co., St. Louis.
Davison Chemical Div., W. R. Grace & Co., Baltimore.
Delco Appliance Div., General Motors Corp., Rochester, N. Y.
Drayer-Hanson Div., Hi-Press Air Conditioning of America, Inc., Los Angeles.
Drying Systems Co., Chicago.
"Freon" Products Div., du Pont de Nemours & Co., Inc., Wilmington.
Dunham-Bush, Inc., Riverside, Calif.
Edwards Engineering Corp., Pompton Plains, N. J.
Electro-Air Cleaner Co., Inc., McKees Rocks, Pa.
Elgen Mfg. Corp., Long Island City, N. Y.
Essick Mfg. Co., Los Angeles.
Farr Co., Los Angeles.
Flanders Filters, Inc., Riverhead, N. Y.
Flexonics, Div. of Calumet & Hecla, Inc., Bartlett, Ill.
Fluor Products Co., Santa Rosa, Calif.
Freeze Eazy Industries, Santa Rosa, Calif.
Frigikar Corp., Dallas.
Frigiquip Corp., Oklahoma City.
General Chemical Div., Allied Chemical Corp., New York City.
General Filters, Inc., Novi, Mich.
Gerwin Industries, Inc., Michigan City, Ind.

(To Be Continued)

Plant Vacation Schedule

Shutdowns Starting June 19 or Later

This is the first in a series of handy guides to summer vacation or inventory shutdown schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Armstrong Furnace Co., Columbus, Ohio	6/19-6/30		None
Skuttle Mfg. Co., Milford, Mich.	6/23-7/10	Open	None
American Air Filter Co., Inc.,			
Famco Div., Louisville, Ky.	6/24-7/9		Emergency
Herman Nelson Div., Moline, Ill.	6/24-7/9		Emergency
Illinois Engineering Div., Moline, Ill.	6/24-7/9		Emergency
Kirsch Co., Refrigeration Div., Sturgis, Mich.	6/24-7/9	Open	None
E. L. Wiegand Co., Pittsburgh	6/24-7/9	6/24-7/9	Stock Only
Dunham-Bush, Inc., Marshalltown, Iowa	6/25-7/9		Emergency
C. Schmidt Co., Cincinnati.	6/25-7/9	Open	Stock Only
Brundage Co., Kalamazoo, Mich.	6/26-7/8	6/26-7/8	Emergency
Global Air Conditioning Corp., San Francisco	6/26-7/9	6/26-7/9	Stock Only
Lennox Industries, Inc., Marshalltown, Iowa	6/26-7/8	6/26-7/8	Regular
C. A. Olsen Mfg. Co., Elyria, Ohio	6/26-7/7	Open	Regular
Stewart-Warner Corp., Heating & Air Conditioning Div., Lebanon, Ind.	6/26-7/9	6/26-7/9	Emergency
Victory Metal Mfg. Corp., Plymouth Meeting, Pa.	6/26-7/9	Skeleton	Stock Only
Wagner Electric Corp., St. Louis	6/26-7/9	Open	Stock Only
Williamson Co., Cincinnati	6/26-7/7	Open	Stock Only

Any manufacturer who plans to close his plant or offices for vacation or inventory this summer and who has not received a vacation schedule form from the NEWS is invited to submit his closing schedule for publication.

Please include name and location of plant, date of closing, last day plant is closed (same for office; if office remains open, please state), and whether there will be regular shipments, emergency shipments, shipments from stock only, or no shipments at all during the closed period.

Address your schedule to George Hanning, Assistant Editor, Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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☐ Automatic Refrigeration—$13.50
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☐ Management Guide for Dealer-Contractors—$18
☐ New Master Service Manual—$1.50
☐ Refrigeration and Air Conditioning—$8.50
☐ Refrigeration Engineer's Manual—$3
Refrigeration Problems and Their Solution—$1.50 each
☐ J-1 ☐ J-2 ☐ J-3 ☐ J-4 ☐ J-5
Servicing Automobile Air Conditioners. ☐ Vol. 3 $1
Vols. 1 ☐, 2 ☐, 4 ☐, $2 ea.
☐ Parts and Labor Rates for Auto Air Conditioning—$30

Warm Air Heating & Air Conditioning Library

☐ Complete Library—$20
☐ Digest—$1.50
☐ 1. Comfort Survey—$1
☐ 2. Frame Houses—$1
☐ 3. Calculating Heat Loss—$1.50
☐ 3. Simplified Heat Loss—$.75
☐ 4. Perimeter Systems—$1.75
☐ 5. Gravity Systems—$1
☐ 6. Adjusting Air Conditioning—$1.25
☐ 7. Winter Systems—$1
☐ 7A. Ceiling Panel Systems—$1
☐ 8. Application Guide—$1.50
☐ 9. Year-round Systems—$1.25
☐ 9. (Supplement) Perimeter on-slab Systems—$.50
☐ 10. 4-in. Pipe Systems—$1.25
☐ 11. Summer Systems—$1.50

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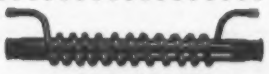
Compressor damage due to slugging ends once and for all with the installation of the Refrigeration Research Suction Accumulator.

Easily and quickly installed in the suction line just ahead of the compressor, the Suction Accumulator *meters* refrigerant and oil back to the compressor at a controlled rate.....even though several pounds of refrigerant may suddenly return through the suction line.....compressors go to work quietly and safely.

Construction of the Suction Accumulator is such that it cannot trap oil and tends to act as a suction muffler to prevent transmission of suction noise.

Just four sizes cover ½ through 15 H.P. range!



Blue Ribbon Heat Exchangers
Available in sizes from 1/4 through 10 h.p. these competitively priced heat exchangers have parallel fittings sized to match refrigerant lines of standard units.

Bull Dog Filter-Driers
These low cost, quality driers feature progressive filtering.....retain a maximum amount of dirt without pressure drop or plugging up. Available in either Molecular Sieve or Silica Gel desiccant.

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MECHANICAL INDUSTRIES PRODUCTION CO.
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SOUTHERN PLANT: DANIA, FLORIDA

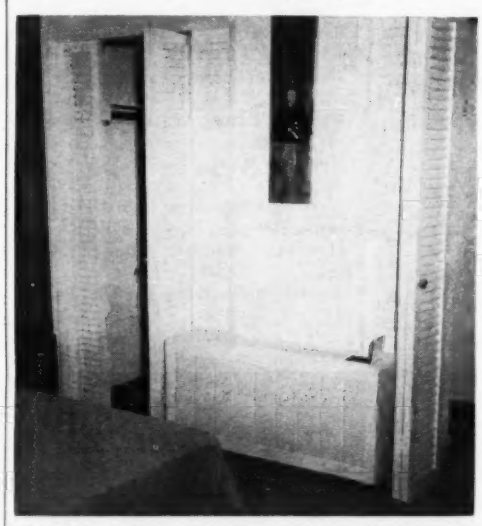
Birch Towers Apartments Challenged Cooling Designers, Installers

Blending Air Distribution Units Into Decor, Machinery Placement Cited

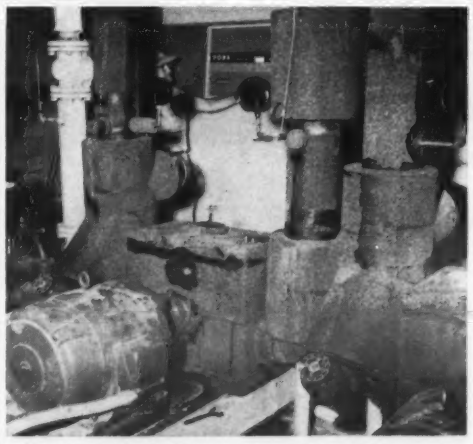
THE 18-STORY BIRCH TOWERS is among the newest of the luxury-type multiple-dwelling-type buildings which are dotting the landscape at Ft. Lauderdale, Fla. Birch Towers apartments are leased on a year-round basis, and naturally they are air conditioned. York's three-pipe "Hi-I" system provides complete independent control of year-round conditions in each individual apartment. Location of air distribution outlets varied by type and size of the individual apartments.

This type of luxury apartment building will often offer some special challenges to the designers and installers of air conditioning equipment, both in terms of finding the right place to install the heavy machinery, and also in blending in the actual air distribution units with the carefully designed decor. The accompanying picture story explains how some of these challenges were met in the Birch Towers job.

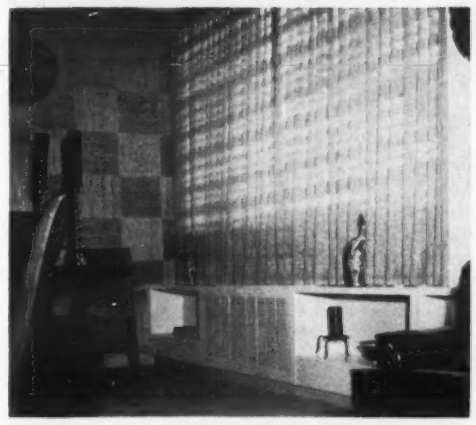
HIGH-WALL REGISTERS served from induction boxes mounted in false ceilings sometimes built into hallways provide air distribution for parts of the luxury apartments in Birch Towers. On wall at right is simple temperature control selector, which acts through an automatic "Duo-flow" control valve to modulate the flow of either hot or cold water, piped individually to the unit in the three-pipe system.



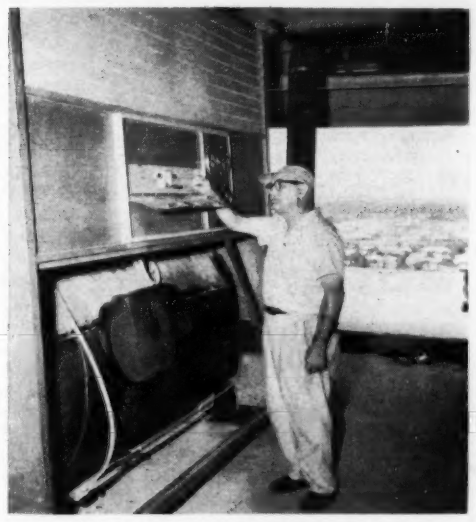
SOMEWHAT UNUSUAL is floor-mounted induction unit not under window, which serves bedroom area. Neatly installed between fold-out closet doors, it takes up little usable room. Lid is opened on control regulator, which permits individual controlled temperatures in each room.



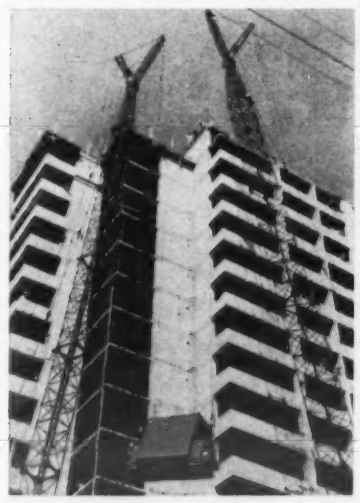
CIRCULATING WATER PUMPS located in roof enclosure which houses the "Turbopak" unit carry chilled water to distributing headers. Boilers for the heating system and air moving equipment for the primary air are located in a special equipment room on the top floor.



INDUCTION UNIT under window in living area blends nicely with decorator treatment. "Bookcase type" of enclosures for the unit were decided upon as best complements the decor chosen for the apartment. Air is constantly circulated through each apartment at all times, eliminating the likelihood of mildew or mustiness when tenants are not in residence.



HIGH ABOVE the white-roofed houses in Ft. Lauderdale, the Birch Tower operating engineer starts up the 150-ton York "Turbopak" compressor, pushing a button on the simple starting panel. Roof-mounted unit has operating advantages, and installation in special enclosure is such that the building is not marred in any way.



TRANSPORTED IN ONE PIECE to the roof by the use of two cranes was the 150-ton "Turbopak" unit. Installation was made by Broward York Co. Two cranes were used because they were at the building site. Installation crew believes that lift could have been accomplished readily with one crane.

Every Home is a prospect for a low-cost

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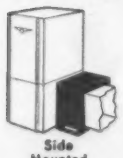

Side Mounted Base Flow

Top Mounted Counter Flow

Ceiling Mounted Horizontal Flow

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DRYERS
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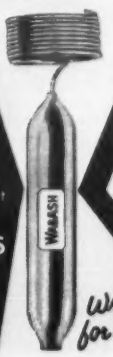
STRAINERS
- Almost 2 sq. in. of 150 mesh monel



Special design makes installing, adjusting, and servicing a "one-stop" job!

CAP TUBES give perfect results "as is" for all units to ⅓ H.P., freezers to ⅓ H.P., and water coolers to ¼ H.P.

FOR BEST RESULTS specify No. 698-S2/F2 Strainer-Cap tubes and No. 699-S2/F2 Dryer-Cap tubes.

SPECIAL COMBINATIONS are available for use up to ¾ H.P. for R-12 and R-22.

Write for information to- WABASH CORP. / 2300 S. Western Ave., Chicago 8
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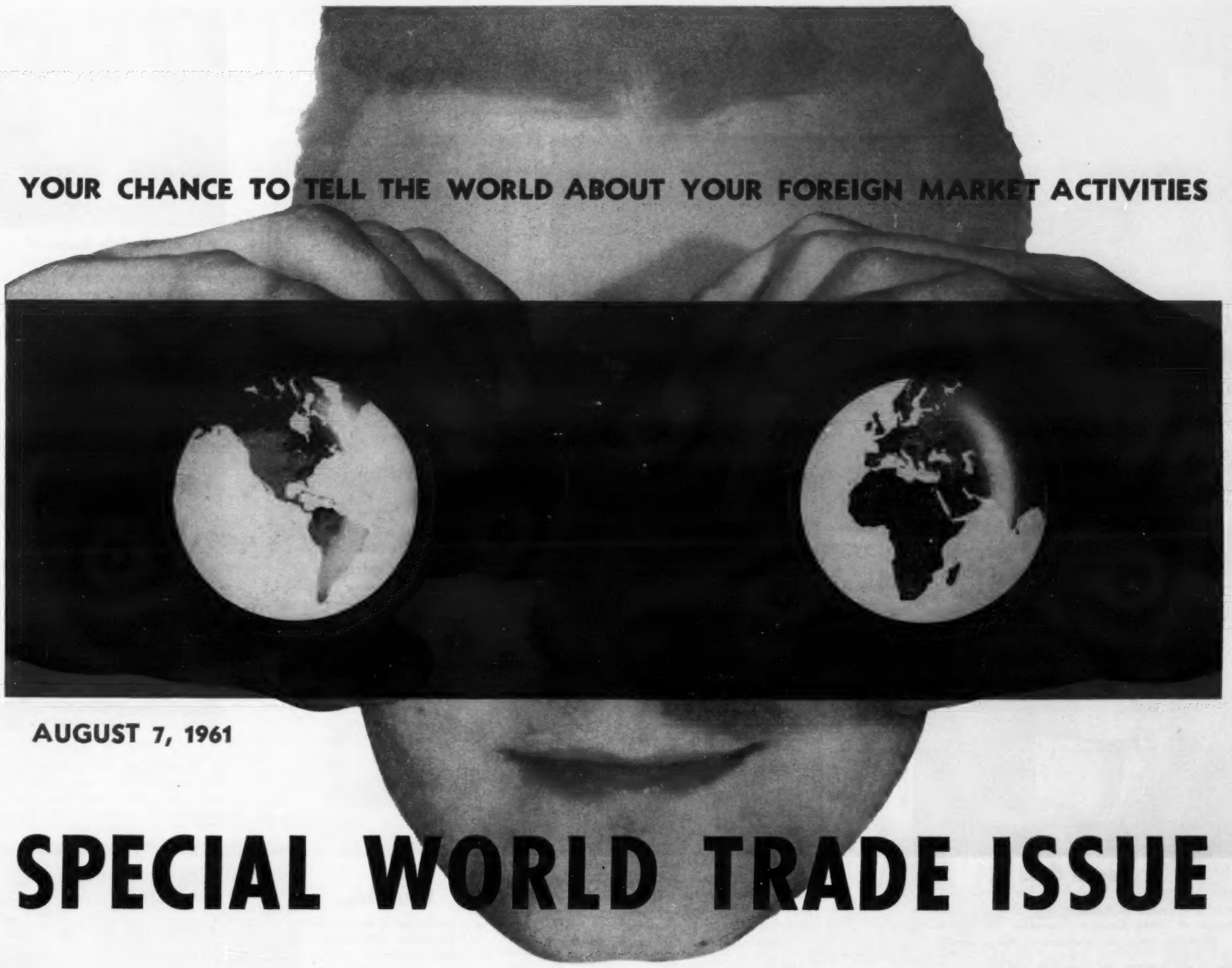

SPECIAL WORLD TRADE ISSUE

AT NO TIME IN HISTORY HAS WORLD TRADE BEEN MORE IMPORTANT

Coming up—the fourth annual World Trade Issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS! Designed both to *build your overseas markets* and to keep you informed on market potentials and competition abroad.

The August 7, 1961, World Trade Issue will be *the* issue of the year for the growing number of NEWS subscribers with a vital interest in world trade—export-import firms, distributors, contractors, government purchasing officials, and designers in the 83 different countries seeking out American-made or American-designed air conditioning, heating, and refrigeration equipment.

The 4th Annual World Trade issue will feature these important stories and statistical reviews:

1. New stature of world trade for mutual benefit and security
2. Growth of U.S. exports in the air conditioning, heating, and refrigeration industry
3. Discussion of export-import firms engaged or interested in the industry
4. On-the-spot reports of exciting new opportunities in Hong Kong and Tokyo by George Taubeneck

Plus—Business appraisals of the European "Common Market," Australasia, the Middle East, and Latin America by industry authorities who live and work in those areas.

Plan *now* to build your export market by scheduling a special ad for this important issue. Based upon the exceptional results obtained by many advertisers in past issues, here are some suggestions on how to get the most benefit:

1. Display foreign plants and personnel
2. Show leading export products
3. Feature foreign distributors
4. Highlight your export division
5. Seek new foreign distributors
6. Introduce new export products
7. Report specific foreign installations

Closing date for the World Trade Issue is July 26. But, don't wait; contact your NEWS representative this week.

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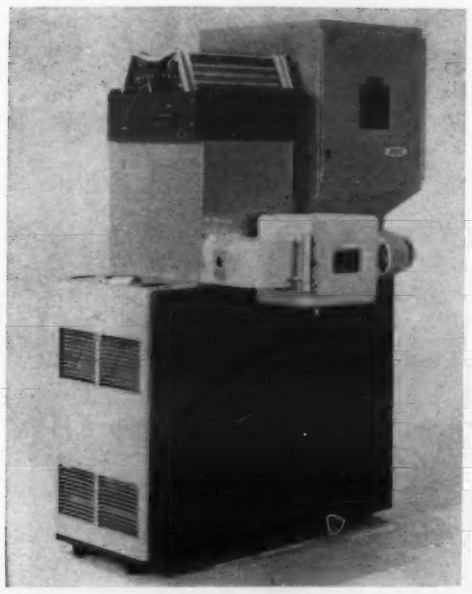
MURRAY HILL 2-1928-9.

CHICAGO, 134 S. LA SALLE ST.,
FRANKLIN 2-8643-4.

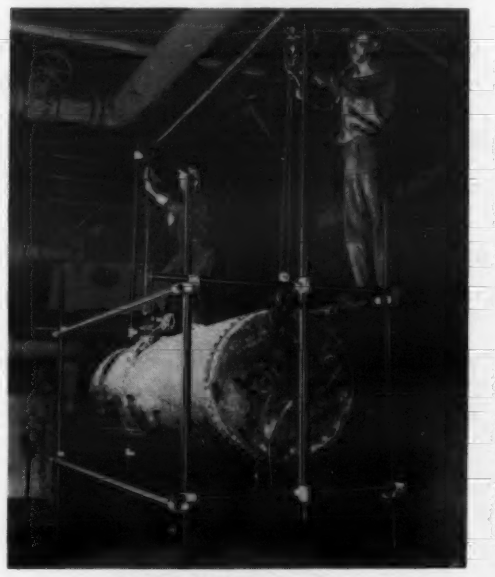
LOS ANGELES, 4710 CRENSHAW BLVD.,
AXMINSTER 2-9501.

Heating & Cooling
News-A-Vision



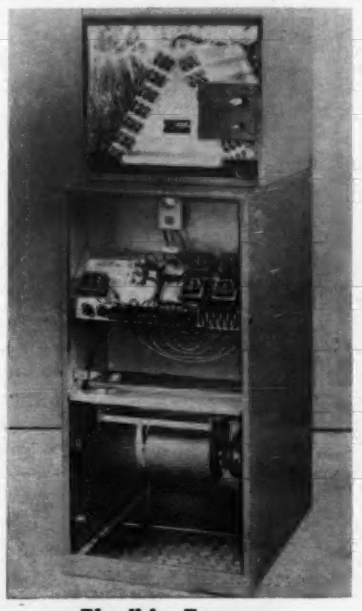
Well Dressed

LENNOX gas furnace is all decked out with electrostatic air filter (r.), spray humidifier (c.), and 3-ton cooling coil (l.).



Do It Yourself

ONE MAN constructed this scaffold and hoist unit in two hours and two men rigged a 1,500-lb tank and lowered it from its position 8 ft above the floor against the wall in 30 minutes. Only pipe cutter and Allen wrench were needed to construct unit from standard steel pipe and Nu-Rail slip-on aluminum fittings.



Flexible Furnace

RHEEM Series 5000 electric furnace permits field man with wire jumpers to revise operating sequence by cutting in heating elements in banks of 5 kw each to meet individual utility requirements.

Econoair's Reward

SUCCESSFUL introduction of Payne Co.'s Econoair combined heating and air conditioning unit brings new engineering assignments for Dick Albert (r.), now chief project development engineer, and Ralph Gieser, who succeeds him as chief of advanced engineering.

Put It Here

C. W. MILLSOM, vice president of sales for Perfection Div., Hupp Corp., shows where new Scott Filter Foam filters are placed in 20 models of 1961 Perfection furnace line.

2,000th Grad

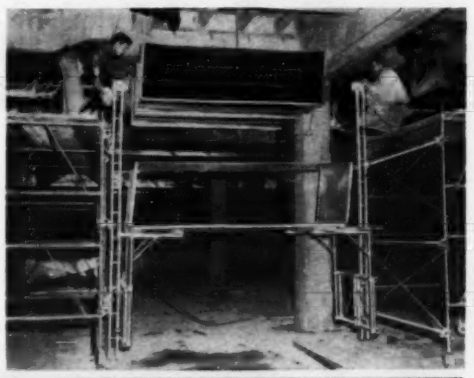
JOHN J. ISHERWOOD (l.), gets his diploma as the 2,000th graduate of the 88th class of Bell & Gossett's School of Living Comfort. Presenting the diploma is Al Meeg, sales vice president of Bell & Gossett.

Refrigerant Fleet

SOME 100,000 1-ton room air conditioners could be charged by the refrigerant being loaded into these four 15-ton tank trucks at Allied Chemical's General Chemicals Div.'s new plant at Elizabeth, N. J. Trucks are part of a company-owned fleet serving the East Coast.

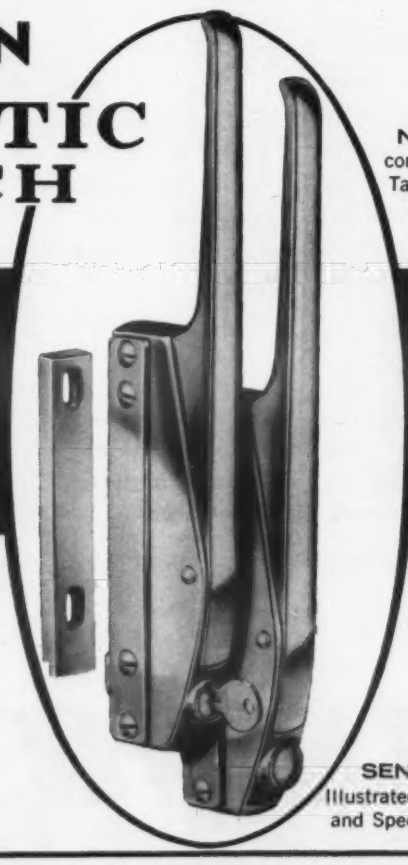
Hoist Helps

MECHANICAL MAN hoist assemblies, made by Up-Right Scaffolds, Berkeley, Calif., when attached to standard scaffolds enabled the lifting and installing of heating duct sections 30 ft long.



NEW! DESIGNED FOR POSITIVE LOCKING AND SEALING

KASON MAGNETIC LATCH



NO. 171C complete with Tamper-proof Cylinder Lock

NO. 171 with Removable Plug

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Service Cost Analysis Chart

	HOURLY COST 1960	1961
DIRECT COSTS		
LABOR		
Hourly wage—certified journeyman, including fringes	4.93	5.21
Social security	.07	.07
Unemployment insurance (including special assessments)	.06	.06
Workmen's compensation	.08	.08
TRUCK EXPENSE (Includes depreciation, maintenance and repairs, oil, gas, insurance, garage)	.75	.75
LOST TIME, call backs, standby	.20	.21
OVERHEAD		
Telephone (including proxy), utilities	.20	.20
Rent, or rental value	.07	.07
Uniforms	.03	.03
Office supplies	.05	.05
Auditing, legal	.04	.04
Advertising	.05	.05
Office equipment, depreciation and repairs	.02	.02
Credit losses	.04	.04
Insurance, fire, theft, liability	.03	.03
Property taxes, city and county	.02	.02
Licenses, city, county, and state	.02	.02
Dues, association	.02	.02
Donations	.02	.02
Interest on business investment	.12	.12
Miscellaneous*	.15	.15
Direct sales expense	.20	.20
TOTAL	7.17	7.46
SUPERVISION		
Average 1 non-production worker to 5 journeymen. Includes: dispatcher, clerical, bookkeeping, etc., executive salary	1.25	1.25
TOTAL	8.42	8.71
PROFIT ? ? ? ? ?		

*Includes use of miscellaneous items normally stocked on truck but not charged to customer, such as small amount of welding supplies, rags, thermometers, flashlight supplies, oil, grease.

Contractor Service Costs--

(Continued from Page 1, Col. 1)

tioning Contractors Association of Southern California, Inc. Committee chairman is Art Smith of Commercial Refrigeration.

Copies of the cost analysis chart, reproduced here, were sent to all refrigeration and air conditioning contractors in Los Angeles and Orange counties by Henry Ely, executive secretary of the association.

Commented Ely: "Sales below costs are one of the most destructive elements in our economy. You are asked to make your own survey at this time and verify the results of our committee study.

"Should your survey indicate that the cost analysis chart varies substantially from your own costs, our association would appreciate your advice.

"We hope that you will find this cost analysis chart useful in your business and of assistance in obtaining a fair return for service work by your firm."

York Conducts FAA Training Program

YORK, Pa.—The York Div. of Borg-Warner Corp. has been selected by the Federal Aviation Agency to conduct a four-week training program for FAA operating engineers charged with responsibility for air conditioning systems in the growing network of new air navigation control centers.

C. J. Brillinger, director of training and education for York, said the contract is a result of the ever-increasing volume of air traffic which presents new challenges to the men and equipment needed to provide safety control.

"Under the stepped-up program," it was explained, "Air Route Traffic Control Centers are being established throughout the country. These facilities employ intricate electronic equipment, most of which generate large amounts of heat.

"To assure the maximum operating efficiency of both personnel and equipment, special air conditioning systems are used to give constant control of temperature and humidity, regardless of the location or outside conditions."

NAPC Program--

(Continued from Page 1, Col. 3)

ley, wife of NAPC's president, cuts the ribbon leading to the exhibit area.

The show will be open that day until 6 p.m. and from 9 a.m. to 5 p.m. on Monday, Tuesday, and Wednesday. On Tuesday, the exposition will be open free of charge to Greater Detroit area homeowners.

Biggest Since 1957

Space sales for the exposition were some 240 sq ft more than sold for the Cleveland show a year ago, Lawrence P. Mutter, assistant executive secretary of NAPC reported recently. He pointed out that the Detroit show will be the biggest since the 75th—the Diamond Jubilee convention and exposition of NAPC—held in Dallas in 1957.

The convention will get under way officially at 10 a.m. on Monday, June 19. Among other things, the delegates will hear greetings from the Refrigeration & Air Conditioning Contractors Association by President Walter McCarty, and from the Mechanical Contractors Association of America by President Frank C. McBride.

Barry Goldwater Keynoter

U. S. Senator Barry Goldwater (R., Ariz.) will deliver the keynote speech.

The Tuesday morning program, June 20, will include an address by Peter T. Schoemann, general president of the United Association. The Wednesday morning program will feature an address by Arthur H. (Red) Motley, chairman of the board and immediate past president, Chamber of Commerce of the U. S., and publisher of *Parade* magazine.

Among several reports to be presented during the convention will be one on Wednesday morning by the NAPC Technical Dept., which includes the Heating-Cooling Div. Louis Bloom is chairman of this division.

The concluding convention session Thursday, June 22, will be held in the Ball Room of the Sheraton - Cadillac, convention headquarters hotel, because of the closing of the exposition the day before in Cobo Hall. Election of new officers will be the principal order of business.

Social events planned for the gathering include a New Orleans night informal buffet supper with entertainment and dancing in Cobo Hall Sunday evening, June 18; on Tuesday evening in Ford Auditorium, the "Big Show" featuring Wayne King's orchestra, Hildegarde, and other acts; regional and state association dinners Wednesday evening; and the President's Ball at the Sheraton-Cadillac hotel Thursday night.

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AIRVEC
The completely silent Air Cooled Condenser
Never needs cleaning
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WATER COOLED COAXIAL CONDENSERS
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Reduce costs 40% . . . Reduce condenser water 35% . . . Reduce refrigerant charge . . . Stabilize capillary performance . . . Compact shapes.
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WRITE FOR BULLETIN MV-1

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TEmple 5-2808
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NO GREATER PROFITS IN THE ENTIRE HISTORY OF VENDING!
BIG MONEY in ICE!
AVERAGE BAG SELLS for 60¢
YOUR COST 8¢ (incl. bag, water & electricity)
YOUR PROFIT 52¢
ICE TOWER
AUTOMATIC ICE CUBE VENDING MACHINE
It's Fully Automatic!
• It makes its own cubes — automatically!
• It stores them — automatically!
• It vends them — automatically!
You don't buy ice! You don't load ice!
You don't fill bags! You don't handle ice!
ICE TOWER DOES IT ALL — automatically!
NOW — It's not necessary to be an ice manufacturer to get into the booming ice vending business! Over $350,000,000 worth of ice was sold last year — double the gross of only a few years ago! And now — anyone can sell ice — automatically!
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THE ICE TOWER means EXTRA profits! — With no labor costs, no effort, no additional investment, no cash outlay for ice, no loading! Water and electricity go in — ice cubes come out!
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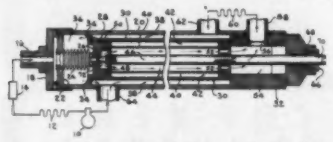
PATENTS

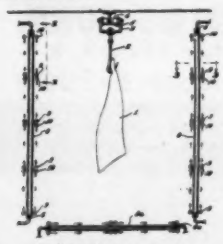
Week of Feb. 14 (Continued)

2,971,349. TEMPERATURE DIFFERENTIAL VALVE. Charles D. Orth, Cedarburg, and Ellsworth E. Burmeister, Milwaukee, Wis., assignors to Controls Co. of America, Schiller Park, Ill.



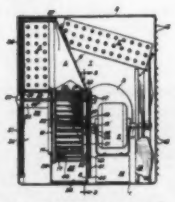
1. A valve comprising, a body having an inlet and an outlet with a flow path therebetween, a valve seat member in the flow path, flexible conduit means connecting the inlet to the seat member, the seat member being movable in the body, a valve member cooperating with the seat member to regulate flow to the outlet, temperature responsive means in the flow path downstream of the valve member and connected to one of the members to actuate it in accordance with temperature change. . . .

2,971,350. RADIANT COOLING SYSTEMS. Clarence A. Mills, Cincinnati, Ohio, assignor to Reflectotherm, Inc., Cincinnati, Ohio.



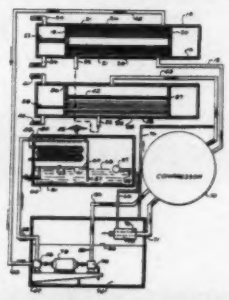
1. In combination with a carbon black coated cooling plate for absorbing ultra long infrared heat rays, means for preventing moisture condensation on the plate comprising a pipe having perforations positioned to direct air currents parallel with the surface of the plate and another pipe spaced from the first noted pipe and having perforations to provide intakes for the air from the perforations on the first noted pipe whereby a blanket of air will circulate along and insulate the surface of the cold plate, and means for controlling the dew point of the air in the air blanket to prevent moisture condensation on the plate.

2,971,351. ROOM AIR CONDITIONER. Wendell H. Webster, Albion, Mich., assignor to McGraw-Edison Co., Milwaukee, Wis.



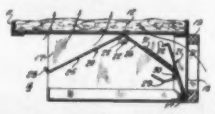
1. A self-contained room air conditioner including a housing and a partition wall separating said housing into a room communicating heat absorping compartment and a heat dissipating compartment, a fan in said absorbing compartment adapted to impel the flow of air therethrough and discharge the same into the room being cooled. . . .

2,971,352. NON-CONDENSIBLE GAS REMOVAL SYSTEM FOR REFRIGERANT UNITS. Thomas S. Parker, 1218 Melbourne Ave., Dallas Texas.



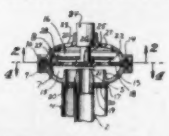
1. The combination comprising a refrigerating system including a refrigerant compressor, condenser and evaporator; a lubricant circulating circuit for the compressor bearings; means for diverting non-condensibles and vaporous refrigerant from the system; means operative on the diverted refrigerant and non-condensibles to liquefy the refrigerant and separate off the non-condensibles; and means for returning the diverted liquefied refrigerant back to the refrigerant system. . . .

2,971,449. DAMPER ARRANGEMENT FOR ROOM AIR CONDITIONER. Charles R. Huckleberry, Clarksville, Ind., assignor to American Radiator & Standard Sanitary Corp., New York, N. Y.



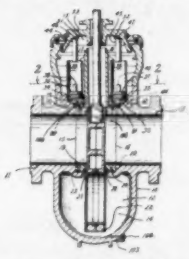
1. In a room air conditioner having a casing with oppositely disposed inlet passageways and a common discharge passageway, improved damper means comprising a first damper pivoted on an axis along one edge thereof to open and close one of said inlet passageways, means for pivoting said damper toward open position, a second damper having to integral walls pivoted on a common axis, one of said walls being positioned to swing in an arc to slidably engage said first damper to swing said first damper toward closed position as well as to present therewith a barrier between said two inlet passageways. . . .

2,971,525. FLOAT-OPERATED VALVE. Armand E. Antunez, Jr., 20123 E. Sierra Madre Ave., Glendora, Calif.



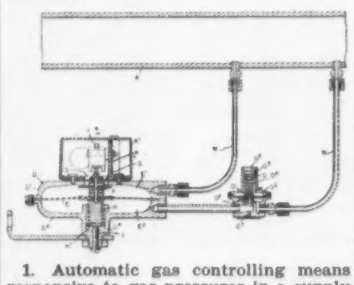
1. A valve construction, comprising: complementary upper and lower housing members, said lower housing member having restricted outlet ports, said upper housing member having antisiphon ports; a yieldable apertured membrane interposed between said housing members to define therewith a lower inlet chamber and an upper antisiphon chamber; an inlet tube extending into said lower housing and inlet chamber and terminating in a valve seat confronting said membrane, the confronting portion of said membrane forming a valve element engageable with said valve seat. . . .

2,971,527. AUTOMATIC PLASTIC SEALED VALVES. Robert Eichenberg and Allen F. Rhodes, Houston, Texas, assignors, by mesne assignments, to McEvoy Co., Houston, Texas.



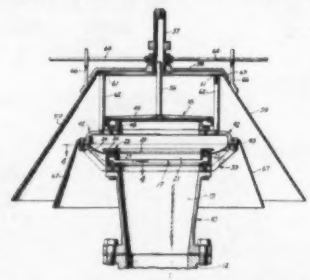
1. A gate valve including a body having a flow passage therethrough and a chamber intersecting the flow passage, seat means in said flow passage at opposite sides of said chamber, a resevoir means associated with each said seat means, each said reservoir means comprising a tubular member and a recess in the wall of said chamber adapted to tightly and removably receive the base of the tubular members, and a passage in said body between each said seat means and the reservoir associated therewith, whereby each said tubular member may be removed by movement thereof in a direction axially of the tubular member.

2,971,530. HIGH-LOW PRESSURE CONTROL MEANS FOR FLUID SUPPLY SYSTEMS. Maurice J. Dewey, 34036 E. Jefferson, St. Clair Shores, Mich.; Katherine Dewey, executrix of the estate of said Maurice J. Dewey, deceased.



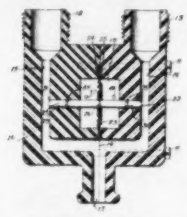
1. Automatic gas controlling means responsive to gas pressures in a supply line, either higher or lower than predetermined limits, comprising a casing, a flexible diaphragm dividing said casing into two chambers sealed from each other, a rod centrally connected to said diaphragm having one end passing out from said casing through an aperture therein, sealing means between said casing and said portion of the rod preventing communication from said casing through said aperture, an electric switch operatively connected to the outed end of said rod, separate conduits respectively connecting said chambers with said gas supply line. . . .

2,971,531. RELIEF VALVE. Peter C. Jurs, Oakland, and Joseph P. Van Overveen, Lafayette, Calif., assignors to Shand and Jurs Co., Berkeley, Calif.



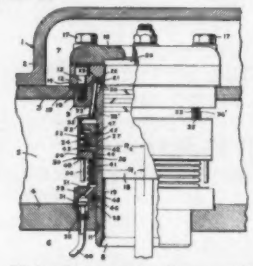
1. In a relief valve, a body having a flow passage adapted to be connected to a source of fluid pressure or vacuum, an annular seat, a rigid annular member carried by the body, a rigid annular member having an opening therethrough communicating with the passage of the body, pressure valve means carried by the rigid annular member to permit flow of fluid from said passage under conditions of excess pressure, a hood mounted on said rigid annular member and being formed to provide a continuously expanding flow passage between the hood and the body. . . .

2,971,533. PRESSURE OPERATED MIXING VALVE. Carl C. Bauerlein, Lincolnwood, Ill., assignors to The Dole Valve Co., Morton Grove, Ill.



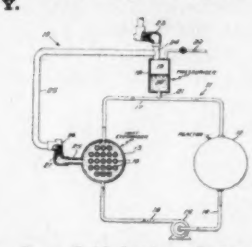
In a tempering valve for water and the like, a two part valve body having a hot water inlet passageway leading into one part thereof, and a cold water inlet passageway leading into the other part thereof in generally parallel relation with respect to said hot water inlet passageway, a common outlet leading from said valve body along the joint between the halves thereof, a diaphragm chamber in each part of said valve body between said inlet passageways. . . .

2,971,690. UNLOADING MEANS FOR A RECIPROCATING COMPRESSOR. Andrew J. Nicholas, Suffield, Conn., assignor to Worthington Corp., Harrison, N. J.



1. Unloader means for varying the capacity of a reciprocating compressor including a casing, a cylinder in said casing, a piston slidably disposed in said cylinder, a suction inlet and a discharge outlet for said cylinder and having valve means operatively associated therewith to control fluid flow into and out of said cylinder. . . .

2,971,746. PRESSURE SAFETY ASSEMBLY FOR HEAT EXCHANGERS. Alan Bell, Cookham, England, assignor to Foster Wheeler Corp., New York, N. Y.



1. In a fluid heat exchange system having a fluid heating means to provide a heated fluid, a heat exchanger communicating with said heating means to receive the heated fluid therefrom and a source of fluid to be heated at a pressure substantially greater than the pressure of the heated fluid, said heat exchanger being adapted to pass said heated fluid and fluid to be heated in indirect heat exchange relationship with each other. . . .

(To Be Continued)

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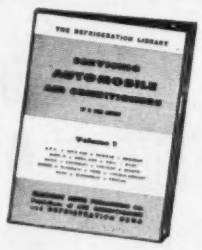

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Volume 2. (139 pages, 109 illustrations.) Covers 1956-57 models of A.R.A., American Motors, Airtemp, Artic-Kar, Buick, Cadillac, Chevrolet, Chrysler, DeSoto, Dodge, Edsel, Ford, Frigette, Frigikar, Kauffman, Mark IV, Mercury, Mobilette, Oldsmobile, Polar-Temp, Pontiac, Vornado. **Price: $2**

Volume 3. (42 pages, 37 illustrations.) Covers 1958 models of A.R.A., Airtemp, Artic-Kar, Buick, Cadillac, Cartrol-Aire, Chevrolet, Chrysler, Clardy, DeSoto, Dodge, Equip-Aire, Frigette, Frigikar, International, Kauffman, Mark IV, Mobilette, Mopar, Novi, Oldsmobile, Parkomat, Plymouth, Polar-Temp, Pontiac, Vornado. **Price: $1**

Volume 4. (83 pages, 72 illustrations.) Covers 1959 models of A.R.A., American Motors, Artic-Kar, Buick, Cadillac, Chevrolet, Chrysler, Climatic Air, Continental, DeSoto, Dodge, Eaton, Edsel, Equip-Aire, Ford, Frigette, Frigikar, Lincoln, Lo-Merc, Mark IV, Mercury, Mopar, Novi, Oldsmobile, Parkomat, Pontiac. **Price: $2**

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COMPRESSORS AND parts, new or used and repairable; Brunner, General Electric, Copelametic, Mills, etc. Give full details as to model number, horsepower, quantities, etc. Write UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

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500 TECUMSEH P-91 "pancake" condensing units, ⅛ h.p. 115V, 60 cycle, manufacturers' factory rebuilts like new for service replacement-compressor, guaranteed, individually boxed. Quantity price $20.00 ea. ship wt. 45 lbs. Sample units $23.95 f.o.b. New York. 500 Tecumseh P-91 compressors only with relay and overload, like new, same as above—individually boxed—guaranteed quantity price $15.95; sample compressor $18.95. Ship wt. 26 lbs. Check or money order to: COMMERCIAL CONTROLS, 1463 Crotona Place, Bronx 56, New York City. WY 2-5083.

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BUSINESS OPPORTUNITIES

FOR SALE: Because of a disabling accident, the oldest established refrigeration service business in a Southern Oregon town of 9,000, is for sale, or might lease to competent, qualified man. Write for details to W. D. MORGAN, P. O. Box 86, Ashland, Oregon.

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SERVICING AUTO air conditioners? Then you'll save time and earn more money if you are fully informed on all types of systems on the market. They're described fully in "Servicing Automobile Air Conditioners" available in four volumes covering models from 1954 through 1959. Vols. 1, 2, and 4 are $2 each; Vol. 3 is only $1. See your wholesaler or order from BUSINESS NEWS PUBLISHING CO., Dept B, 450 W. Fort, Detroit 26, Mich.

Comparative Statistical Data from MCA Staistical Survey Corporations

	Total All Classes 1960	1959
Overhead Expressed as a Percentage of:		
Gross Billings	10.93	11.58
Direct Job Costs Incl. Subcontracts	12.44	13.39
Direct Job Costs Excl. Subcontracts	15.43	16.66
Method of Accounting:		
"Percentage of Completion"	43.58	52.02
"Completed Contracts"	56.42	47.98
Percentage of Sales Made In:		
(a) Heating (1960 Only)	35.24	.....
(b) Air Conditioning/Cooling (Excl. Sheet Metal)	18.80	48.92
(c) Sheet Metal	7.78	7.58
(d) Plumbing	19.20	21.81
(e) Industrial Piping	13.76	17.12
(f) Other	5.22	4.57
Plant Facilities and Fabrication Expressed In Percentage of Replies:		
(a) Having a Pipe Fabrication Shop	49.18	46.82
(b) Having a Sheet Metal Fabrication Shop	22.94	22.99
(a) Preferring to Fabricate—On the Job	51.14	60.11
(b) Preferring to Fabricate—In the Shop	48.86	39.89
Percentage of Leased Equipment:		
(a) Passenger Cars (1960 Only)	28.04	.....
(b) Trucks (1960 Only)	9.27	.....
(c) Power and Construction Equipment	12.86	10.91
(d) Office Equipment	3.37	1.75
(e) Office Space	55.21	56.54
(f) Shop and/or Warehouse	55.76	55.73
Percentage of Owned Equipment:		
(a) Passenger Cars (1960 Only)	71.96	.....
(b) Trucks (1960 Only)	90.73	.....
(c) Power and Construction Equipment	87.14	89.09
(d) Office Equipment	96.63	98.25
(e) Office Space	44.79	43.46
(f) Shop and/or Warehouse	44.24	44.27
Miscellaneous:		
Number of Replies Used	192	207
Average Collection Period In Days	64	66
Total Business Signed Up Each Period	$247,607,417	$291,301,220
Average Accounts Receivable	335,978	298,842
Average Advertising Expenditures	3,212	2,443

Corporations

	Total All Classes 1960	1959
Gross Billings	100.00	100.00
Cost of Job Billings		
(a) Beginning Inventory	3.78	3.36
(b) Purchases—Materials and Apparatus	41.91	42.63
(c) Subcontracts	17.02	16.96
(d) Productive Field Payroll	26.64	25.31
(e) Misc. Direct Job Costs	2.59	2.05
Sub-Total	91.94	90.31
Less: Ending Inventory	4.10	3.85
Total Direct Job Costs	87.94	86.46
Total Overhead Costs	10.93	11.58
Total Direct Job and Overhead Costs	98.77	98.04
Net Income from Construction	1.23	1.96
Misc. Other Income	.35	.33
Net Income Before Federal and State Income Taxes	1.58	2.29

MCA Survey--

(Continued from Page 1)

flect an increasing awareness of the necessity of holding on to important personnel. After all, the owners can realize a profit even if they cut their own salary, but it is necessary to offer incentive to keep top non-officers."

Average volume of sales for all replies combined is $1,814,174; the average volume for 1959 was $1,542,799.

Average net worth of the 223 respondents for 1960 was $270,404; the figure for 1959 was $265,946.

The survey showed about 77% of the mechanical contractors using straight-line methods for depreciating capital assets. Commenting on this, Cherne mused, "It is hard to understand why more contractors do not use the declining balance method which allows a faster write-off." There was no comment from the floor.

MCA's 1959 statistical report gave a misleading figure for the activity of mechanical contractors in air conditioning because the survey included both heating and cooling in the category. The report showed that 47.33% of the contractors' volume came from air conditioning.

Breaking the figure into heating and cooling segments for 1960, the survey shows that heating accounted for 35.24% of sales; air conditioning and cooling (excluding sheet metal) accounted for 18.8%.

The remaining volume broke down this way: Sheet Metal—7.78%; Plumbing—19.20%; Industrial Piping—13.76%; Other—5.22%.

Over 49% of the respondents maintain a pipe fabrication shop; about 23% have sheet metal fabrication facilities.

Other statistical relationships may be determined by referring to the several tabulations which accompany this article.

Refrigerator, Freezer Sales Down for March, First Quarter—NEMA

NEW YORK CITY—Total industry sales of electric household refrigerators and farm and home freezers in March and the first quarter of 1961 declined from year-earlier periods, according to the National Electrical Manufacturers Association.

Refrigerator sales in March totaled 300,000 compared with 345,000 in March, 1960, NEMA estimated. First-quarter sales amounted to 764,700 against 925,600 in the like period last year.

Freezer sales were reported as totaling 80,400 in March, compared with 108,100 a year earlier, while sales in the first quarter dropped to 206,900 from 253,400.

These figures are based upon expansion of data reported to the NEMA Statistical Dept. to cover total industry sales including exports.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Comparative Operational Percentage from MCA Statistical Survey Individuals and Partnerships

	Total All Classes 1960	1959
Gross Billings	100.00	100.00
Cost of Job Billings		
Beginning Inventory	3.41	3.55
Materials and Apparatus	40.28	45.81
Subcontracts	17.47	11.57
Productive Field Payroll	27.64	26.63
Misc. Direct Jobs Costs	2.01	.93
Sub-Total	90.81	88.49
Less: Ending Inventory	2.72	4.34
Total Direct Job Costs	88.09	84.15
Total Overhead Costs	8.66	11.65
Total Direct Job and Overhead Costs	96.75	95.80
Net Income from Construction	3.25	4.20
Misc. Other Income	.14	.79
Net Income before Federal and State Income Taxes	3.39	4.99

Individuals and Partnerships

	Total All Classes 1960	1959
Overhead Expressed as a Percentage of:		
Gross Billings	8.66	11.65
Direct Job Costs (Incl. Subcontracts)	9.83	13.84
Direct Job Costs (Excl. Subcontracts)	12.26	16.05
Method of Accounting:		
"Percentage of Completion"	58.62	61.54
"Completed Contract)	41.83	38.46
Percentage of Sales Made In:		
(a) Heating (1960 Only)	38.61	.....
(b) Air Conditioning/Cooling, Excl. Sheet Metal	11.79	47.33
(c) Sheet Metal	7.11	5.84
(d) Plumbing	25.06	30.16
(e) Industrial Piping	8.38	11.08
(f) Other	9.05	5.59
Plant Facilities and Fabrication Expressed In Percentages of Replies:		
(a) Having a Pipe Fabrication Shop	40.74	44.75
(b) Having a Sheet Metal Fabrication Shop	14.81	26.47
(a) Preferring to Fabricate—On the Job	68.00	57.14
(b) Preferring to Fabricate—In the Shop	32.00	42.86
Percentages of Leased Equipment:		
(a) Passenger Cars (1960 Only)	3.70	.....
(b) Trucks (1960 Only)	3.93	.....
(c) Power and Construction Equipment	10.58	5.68
(d) Office Equipment	3.45	2.50
(e) Office Space	37.04	37.80
(f) Shop and/or Warehouse	37.04	40.24
Percentages of Owned Equipment:		
(a) Passenger Cars (1960 Only)	96.30	.....
(b) Trucks (1960 Only)	96.07	.....
(c) Power and Construction Equipment	89.42	94.32
(d) Office Equipment	96.55	97.50
(e) Office Space	62.96	62.20
(f) Shop and/or Warehouse	62.96	59.76
Miscellaneous:		
Number of Replies Used	29	41
Average Collection Period In Days	51	59
Axerage Accounts Receivable	$120,133.00	$117,078.00
Average Advertising Expenditures	$ 1,919.00	$ 2,022.00

Average of Salaries Reported

Officers	Class 4	Class 3	Class 2	Class 1
Stockholders	$25,159	$18,635	$14.606	$7,579
Non-Stockholders	15,011	12,368	9,597	.....
Non-Officers				
Highest Paid	21,640	13,217	9,375	7,328
Second Highest	14,518	11,489	8,392	6,910
Third Highest	12,247	9,873	7,978	6,489

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ARI Exposition Plans--

(Continued from Page 1, Col. 4)

the industry's first national trade show ever to be held on the West Coast, will be held Feb. 12-15 at the Great Western Exhibit Center under the sponsorship of the Air-Conditioning & Refrigeration Institute.

Conferences to be held as part of the "Week" activity will include both technical presentations, and panel discussions on business operating problems of current interest to the industry. With the Western Air Conditioning Industries Association acting as the coordinator, ARW, RACCA, and RSES, all holding national conventions during the week, will tie in with the conference sessions.

The preliminary program as announced by Conference Chairman Arthur J. Hess, offers the following line-up of sessions:

Sunday afternoon, Feb. 11 (for service engineers). Drying refrigeration systems. Water treatment. Insulation of piping and systems.

Monday morning, Feb. 12. Business sessions of participating groups. Panel on Air Conditioning Load Calculations, covering new forms for calculations, existing buildings, sun loads and orientation, lighting loads.

Monday afternoon. Business Administration, including discussions on taxes, credit, and salesmanship. Special Session for Young Engineers—equipment vibration control, selection of belt drives, motor selection.

Monday night. Symposium for Designers. Heat pumps vs. absorption systems.

Tuesday morning, Feb. 13. General Session on special applications. Hypothermia (use of refrigeration in operations). Airborne bacteria control. School house air conditioning.

Tuesday morning. High temperature heating panel. Discussion to embrace pumps, boilers, controls, piping design.

Tuesday afternoon. Panel discussion on Inter-Industry Relations. Direct selling by manufacturers and representatives. Free engineering by contractors. Manufacturing and competitive sales by contractors. Loose use of "or equal" by engineers. Use of free engineering by engineers.

Wednesday morning, Feb. 14. Panel Discussion on Bid Depositories.

Wednesday afternoon. High Velocity Air Conditioning, embracing discussions on duct work, attenuating boxes, conduit systems, and modular conduction.

Wednesday afternoon. Industrial and Other Applications. Field of cryogenics, defrosting methods, thermoelectric refrigeration.

The social program for "Air Conditioning and Refrigeration Week" will also be a joint enterprise, with a committee comprised of representatives of the various participating groups working out details through Thom Muir, executive vice president of ARW, as coordinator.

All social events, as well as the conference programs, will be held at the Biltmore hotel, according to present plans.

The social program will open with a President's Reception late Sunday afternoon, Feb. 11, with the presidents of each association and their wives acting as hosts.

An "Early Birds" breakfast Monday morning will serve as a "kickoff" for the Exposition and for the "Week" activities. Music, brief welcoming talks, and announcements of programs and plans for the week will constitute the program.

Tuesday night, the "Air Conditioning and Refrigeration Round-Up" is scheduled as one of the major entertainment functions. Dress, decorations, and entertainment will be in the style of the Old West, and there will be an orchestra for dancing. Chuck Wagon style refreshments will be served starting late in the evening, according to the groups.

A "Mardigras" night on Wednesday, Feb. 14 will begin at 6:30 p.m. and continue 'til midnight. Following a cocktail hour, dinner will be served. Participating association officials will speak briefly on the "Let's Make the Industry Grow" theme. Following this an elaborate floor show will be presented, and favors and noisemakers will be distributed to contribute to the carnival atmosphere.

Special events are also being planned for wives who will be accompanying their husbands, these including tours to movie studios and other places of special interest, and a style show.

RACCA Announces Committee for Convention To Be Held In Conjunction with ARI Show

LOS ANGELES—Al Hanson, president of National Refrigeration Sales Corp. here, has announced his 1962 RACCA Convention Committee.

Those working with Hanson will be: Jack Carney, Sam Elster, Bob Heisler, Jake Jacobsen, Bert Stren, and Herb Schuck, all members of RACCA of Southern California who will be convention hosts.

RACCA will headquarter at the Biltmore hotel in Los Angeles which will be the center of association activities. RACCA convention is being held in conjunction with the 1962 ARI Exposition, Feb. 12-16 in Los Angeles.

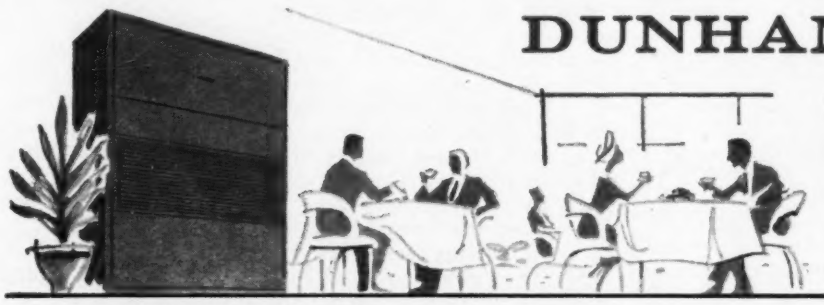
Combination Ad Rates Announced by NEWS, AIR ENGINEERING

DETROIT — Combination advertising rates are now available for advertisers using both AIR CONDITIONING, HEATING & REFRIGERATION NEWS, the weekly newspaper of the industry, and AIR ENGINEERING, the monthly publication concentrated in the field of commercial and industrial air quality control, it was announced by Business News Publishing Co.

Carrier Names Canadian Outlet

TORONTO, Ont., Can.—Thor Industries Ltd. of Toronto has been named a distributor of room air conditioners for Carrier Air Conditioning (Canada).

Thor will market Carrier products in the Province of Ontario.



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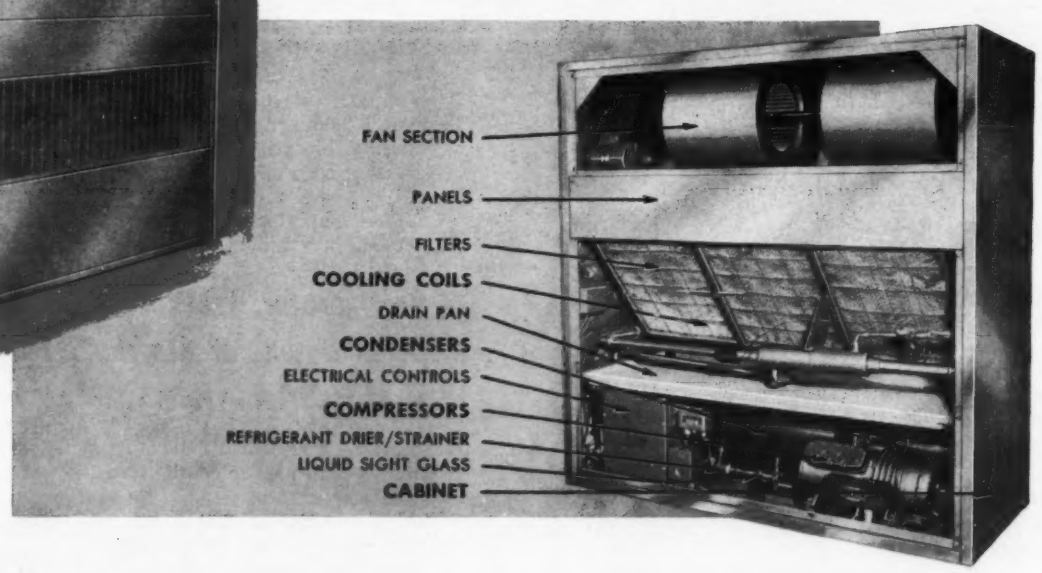
Proves how to properly package air conditioning



Important to contractors and specifiers is peak performance of Dunham-Bush "PAC" Packaged Air Conditioners, achieved through pre-engineered major components. Other manufacturers, using components from diverse sources, must attempt to improvise balance. But Dunham-Bush manufactures and designs the motor compressor, condenser, evaporative coils and cabinet specifically for "PAC". This "one source-one responsibility" is evident in dependable operation and customer satisfaction.

"PAC" units are packaged for use, on-premises or remotely installed, in restaurants, stores, offices, clubs, banks, factories, depots or wherever high capacity, self-contained air conditioning units are required. Attractive finish harmonizes with decor practically anywhere.

"PAC" is available in 10, 15, 20, 25 and 30 h.p. capacities with either front or top discharge Air cooled or Water cooled models.

You'll want to have full details. Write today for Bulletin No. 6022 or request a copy from your nearby Dunham-Bush representative.

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